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UNITED STATES DEPARTMENT OF AGRICULTURE
FOOD AND NUTRITION SERVICE



RFP No. FNS-91-20SLS

**FOOD ASSISTANCE DELIVERY IMPLEMENTATION
AND
EVALUATION STUDIES**

August 8, 1991

**VOLUME I: TECHNICAL PROPOSAL
APPENDICES**

Submitted by:

Price Waterhouse

In Association With:

**Macro International
Benton International**

**Market Facts, Inc.
Electronic Strategy Associates, Inc.
BCA, Inc.**

APPENDIX A

Price Waterhouse Teaming Agreement

DRAFT: 5/28/91

TEAMING AGREEMENT

SECTION 1: PARTIES; EFFECTIVE DATE

This Teaming Agreement (the "Agreement") between Price Waterhouse, with offices at 1801 K Street, N.W., Washington, D.C. 20006 ("Prime") and _____, with offices at _____ ("Sub"), is entered into and effective as of _____, 19__.

SECTION 2: PURPOSE; EXCLUSIVE NATURE OF AGREEMENT

2.1 Purpose. The parties have entered into this Agreement for the purpose of responding jointly to Request for Proposals No. _____ dated _____, 19__, as amended (the "Solicitation"), issued by the _____ (the "Government") for the _____ (the "Project"). The parties agree to exert their best efforts to cause the Government to award a contract for the Project (the "Prime Contract") to Prime and to accept Sub as a subcontractor to Prime for the area of responsibility described in Exhibit A ("Sub's Area of Responsibility"). Sub acknowledges that it has read the Solicitation and warrants that the products and services offered to meet its obligations specified in Exhibit A will meet all relevant specifications and standards in the Solicitation.

2.2 Exclusivity. During the term of this Agreement:

(1) Prime shall not participate in any proposal activity or enter into any teaming arrangement with any third party regarding Sub's Area of Responsibility as specified on Exhibit A with respect to the Project; provided however, that if any Government request or an amendment to the Solicitation changes the requirements of any aspect of the scope of work outlined on Exhibit A, Prime may, at its option, solicit bids from other vendors for the new requirements. If, in Prime's reasonable business judgment, Sub is technically able to meet the new requirements and the bid price of such other vendors as Prime may solicit, Sub shall have a right of first refusal for the new requirements within such a time period as Prime may specify. If Sub exercises its right of first refusal, the parties shall promptly amend Exhibit A. If Sub is unable or desires not to exercise its right of first refusal, Prime may, at its option, enter into a teaming arrangement with such other vendors for the new requirements. Prime also may participate in proposal activity or enter into teaming arrangements in any capacity with third parties in all areas other than those relating to the Sub's Area of Responsibility.

(2) Sub shall not: (a) participate in any proposal activity or enter into any teaming arrangement with any third party regarding the Project; (b) compete independently to become the prime contractor for the Project; or (c) offer or sell its products or services to any third party in support of that party's response to the Solicitation.

SECTION 3: PRE-AWARD RESPONSIBILITIES OF THE PARTIES

3.1 Responsibilities of Prime. Prime, Sub and any third party supporting Prime's bid shall be referred to hereafter collectively as the "Project Team." Prime shall be the exclusive Government contact with respect to the Project and shall decide, in its sole discretion, the final form and content of the parties' response or responses (should modifications or updates be requested by the Government or deemed by Prime, in its sole discretion, to be desirable) to the Solicitation (the "Proposal"), including those portions of the Proposal relevant to Sub's Area of Responsibility ("Sub's Proposal"). In carrying out these responsibilities, Prime shall:

(1) Submit the Proposal to the Government in a timely fashion in accordance with the terms of the Solicitation.

(2) Coordinate and direct all testing and demonstration activities required by the Solicitation or requested by the Government in evaluating the Project Team's products and services.

(3) Facilitate and coordinate all communication with the Government regarding the Proposal, including responses to any direct inquiries by the Government to Sub. Prime may authorize Sub to participate in discussions with the Government if Prime considers such participation necessary or desirable.

(4) Make available to Sub all information relevant to Sub's performance of its responsibilities under paragraph 3.2. Such information shall include, but not be limited to, the Solicitation (including any amendments and associated documents) and all other relevant communications with the Government concerning the preparation, submission and evaluation of the Proposal and the award of the Prime Contract. Prime shall provide Sub with a reasonable opportunity prior to submission to evaluate and comment on the Proposal. Prime shall in no event be required to provide Sub with any cost or pricing data proprietary to Prime or to incorporate in the Proposal any comments or recommendations made by Sub.

(5) Make all news releases, public announcements, advertisements or other publicity regarding the Proposal, the Project or this Agreement.

(6) Identify Sub in the Proposal as a member of a teaming arrangement as provided in Federal Acquisition Regulation ("FAR") Subpart 9.6 and inform the Government that Prime intends to use Sub as a subcontractor for Sub's Area of Responsibility.

3.2 Responsibilities of Sub. Sub agrees to advise and assist Prime as Prime may consider necessary or desirable in order to ensure submission of a successful Proposal and successful completion of all testing and demonstration activities required by the Solicitation or requested by the Government in evaluating the Project Team's products and services. Sub shall:

(1) Timely prepare and submit to Prime the substantive content of Sub's Proposal, which shall comply with all relevant requirements of the Solicitation.

(2) Promptly respond to all reasonable requests by Prime for assistance in preparing the Proposal, including but not limited to requests for (a) additional information with respect to Sub's Proposal, (b) comments on the Proposal and (c) management and technical personnel to assist Prime in any discussions or negotiations with the Government.

(3) Promptly respond to all reasonable requests by Prime for assistance in preparing for and conducting testing and demonstration activities required by the Solicitation or requested by the Government in evaluating the Project Team's products and services, including but not limited to the assistance described in Exhibit A.

(4) Not disclose any information concerning this Agreement, the Proposal, the identity of the members of the Project Team, the Solicitation or its efforts in connection therewith without Prime's prior written consent, which it may grant or withhold in its sole discretion. This prohibition includes the issuance or making of any news release, public announcement, advertisement or other form of publicity.

(5) Promptly provide certificates requested by Prime concerning any matter to which the Prime must certify to in order to submit the Proposal.

3.3 Mutual Obligations. Each party will provide all necessary material and data (including confidential and proprietary data) to complete those portions of the Proposal for which each is responsible, including but not limited to manuscript, art work, and cost or pricing, technical and personnel data. Each party will provide appropriately qualified personnel to perform its obligations. Costs, risks and liabilities which a party may individually incur in fulfilling its responsibilities and obligations under this Agreement shall be the sole responsibility of that party, except that Prime shall have sole responsibility for editing, graphic arts, reproduction, printing, binding and delivery costs incurred in finalizing the Proposal for submission to the Government.

SECTION 4: POST-AWARD OBLIGATIONS OF THE PARTIES

If the Prime Contract is awarded to Prime during the term of this Agreement and such Prime Contract calls for the performance of work in Sub's Area of Responsibility as delineated in Exhibit A, Prime and Sub shall enter into a subcontract for such work. The Parties' obligations under this Section 4 are conditioned on:

(1) Government approval, if required, of Sub's participation in the Project as a subcontractor and of the terms and conditions of the subcontract; and

(2) Agreement by the parties as to the terms and conditions of the subcontract. The parties agree that the subcontract shall include, but not be limited to: (a) the scope of work specified in Exhibit A; (b) the flow-down of all necessary and appropriate terms and conditions of the Prime Contract; and (c) provisions implementing the agreements between the parties as to the principles stated in Exhibit B.

SECTION 5: CONFIDENTIAL INFORMATION

5.1 Confidential Information. During the term of this Agreement, either party may receive information which the other party regards as confidential and proprietary. The parties agree that all information which is clearly marked to indicate its confidential and proprietary status, if disclosed by one party to the other in written, graphic, recorded, photographic or any machine readable form, or disclosed orally and reduced to writing within 30 days after disclosure, shall be considered

"Confidential Information" and shall be subject to the provisions of this Section 5.

5.2 Restrictions on Disclosure. A party receiving Confidential Information (the "Receiving Party") shall hold such information in strict confidence and shall not use, disclose or duplicate such information except for the purpose of performing this Agreement. In performing this Agreement, the Receiving Party is authorized to incorporate Confidential Information in the Proposal provided that any submission of Confidential Information to the Government (a) bears the restrictive legend authorized by FAR clause 52.215-12 or by other applicable procurement regulations and (b) if required by the Solicitation, complies with applicable procurement regulations regarding data rights. The parties acknowledge and agree that Confidential Information contained in the Proposal may be used, disclosed or duplicated by the Government as provided in the Prime Contract.

5.3 Limited Access. The Receiving Party shall permit access to Confidential Information only to its or another Project Team member's partners, principals, directors, officers and full-time employees having a need to know such information in order to allow the Receiving Party to perform fully this Agreement. The Receiving Party shall ensure that such individuals are informed of the confidential and proprietary status of such information and of the restrictions on its use, disclosure and duplication contained in this Agreement. In no event shall the Receiving Party utilize less than the same degree of care with respect to the other party's Confidential Information as the Receiving Party normally utilizes to safeguard and protect its own confidential and proprietary information.

5.4 Restrictions Not Applicable. The restrictions on use, disclosure and duplication of information contained in this Section 5 shall not apply:

(1) after five (5) years from the date the information was last used by the Receiving Party;

(2) if the information is, or after it becomes, publicly available without breach of this Agreement;

(3) if the information is already known to the Receiving Party at the date of disclosure as shown by the Receiving Party's files and records as of the date of disclosure to the Receiving Party, or after it is rightfully obtained by the Receiving Party from third parties without restriction or is independently developed by the Receiving Party without reliance on Confidential Information;

(4) if the disclosing party has provided, or after it provides, the information to any third party (including government agencies or bureaus) without restriction, or

(5) if the information has been, or after it is, released by either party in response to a subpoena, court order or other legal process and is not subject to a protective order; provided that the Receiving Party, if requested by and at the expense of the disclosing party, shall take all reasonable legal steps to oppose such disclosure.

5.5 Notification. Each party shall notify the other (1) immediately upon learning of any unauthorized use, disclosure or duplication of Confidential Information or (2) before using any Confidential Information without restriction in reliance on clauses (2) through (5) of paragraph 5.4 above.

5.6 No License. No license or other right or property interest under trademark, patent, copyright or other legal theory is granted, transferred or implied by the conveyance of Confidential Information from one party to the other pursuant to this Agreement.

5.7 Representations and Warranties. Each party represents and warrants to the other that its disclosure of any information pursuant to this Agreement shall not constitute an infringement of any trade secret, trademark, patent, copyright or other proprietary right of any third party.

5.8 Liability and Injunctive Relief. Each party acknowledges that the other party will suffer irreparable injury as a result of any use, disclosure or duplication of its Confidential Information by the other party in violation of the provisions of this Section 5. Accordingly, either party shall be entitled in such event to preliminary and final injunctive relief without a requirement to post bond in addition to any other applicable remedies, including the recovery of damages.

5.9 Survival of Section 5 Provisions. The provisions of this Section 5 shall survive the termination or expiration of this Agreement.

SECTION 6: LICENSES AND RIGHTS IN INVENTIONS, WORKS OF AUTHORSHIP AND PROPRIETARY TECHNICAL DATA

6.1 Rights in Inventions, Works of Authorship and Proprietary Technical Data. During the performance of this Agreement, subject to the rights granted to the Government by the terms of any Prime Contract, inventions, works of

authorship and other proprietary technical data (as well as the copyrights, patents and similar rights attendant thereto):

(1) conceived and reduced to practice, or, in the case of works of authorship, authored solely by employees of, or persons under contract to, either party shall be owned exclusively by that party;

(2) conceived and reduced to practice, or, in the case of works of authorship, authored jointly by the parties shall be owned as determined by the parties' good faith negotiations to establish their respective rights. Failing agreement or resolution of the matter under Section 10.5, each party shall have an equal undivided one-half interest in the invention, work of authorship, proprietary technical data, copyright or patent without obligation to account. Subject to the terms of any Prime Contract, the parties agree to use their best efforts to reach mutual agreement as to their rights and obligations in connection with the commercial exploitation of any joint invention, work of authorship or proprietary technical data. Failing agreement, the matter shall be a Dispute and resolved as set forth in Section 10.5. In the event of such a Dispute, factors to be considered by the arbitrators include, without limitation, the relative importance of the contribution of each party; the relationship of the subject matter to each party's areas of responsibility hereunder; and that each party's contributions to any such inventions, works of authorship or proprietary technical data shall be deemed to be the work of the parties and not that of any individual(s). Each of the parties agrees to cause their employees to produce only "works made for hire" hereunder and will hold the other party harmless from their failure to do so.

6.2 Assistance and Procurement of Patents, Etc. Each party agrees to use its best efforts to require its employees, and if appropriate, other persons under contract to it, to provide reasonable assistance in the procurement and protection of rights conferred by this Article and to execute all lawful documents in conjunction therewith. Expenses incurred in conjunction with the preparation of patent applications, applications for copyright registrations and in enforcing proprietary rights therein shall be borne by the party owning such rights or, if jointly owned, by the parties in proportion to their respective interests.

SECTION 7: INDEMNIFICATION

7.1 Personal Injury, Property Damage and Infringement. Each party will indemnify, defend and hold the other harmless (including paying reasonable attorneys' fees) the other party and its employees, agents and permitted assigns against all liability

to third parties that: (1) arises from a party's, its employees', agents', or permitted assigns' negligence or willfully wrongful, wanton or reckless conduct that results in death or bodily injury or damage to real or tangible personal property or (2) arises from or in connection with a party's performance under the Agreement that violates any third party's trade secrets, proprietary information, trademark, copyright or patent rights, if: (1) the indemnified party notified the indemnifying party promptly in writing of any claim; (2) the indemnifying party was permitted to control the defense or settlement of the claim; and (3) the indemnified party cooperated with all reasonable requests of the indemnifying party (at the expense of the indemnifying party) in defending or settling the claim.

SECTION 8: KEY PERSONNEL; ADMINISTRATION

8.1 Key Personnel. The parties consider the personnel of Sub listed below (the "Key Personnel") to be essential to the successful completion of the Sub's obligations under this Agreement. Sub agrees to commit the Key Personnel to perform its obligations under this Agreement to the extent necessary to ensure their timely completion. Key Personnel shall be replaced only by persons of at least equal ability and qualifications and only after Sub obtains the written consent of Prime.

Key Personnel: _____

8.2 Administration.

(1) Prime's Contract Representative is _____. Prime's Contract Representative is authorized to amend the Agreement in writing, but not orally, and to send and receive notices.

(2) Prime's Technical Representative is _____. Prime's Technical Representative is responsible for technical administration of this Agreement and is authorized to make technical decisions within the scope of this Agreement.

(3) Sub's Contract Representative is _____. Sub's Contract Representative is authorized to amend this Agreement in writing, but not orally, and to send and receive notices.

(4) Sub's Technical Representative is _____. Sub's Technical Representative is responsible for technical administration of this Agreement.

SECTION 9: TERM; TERMINATION

9.1 Term. The term of this Agreement shall begin on the effective date stated in Section 1 and shall expire on _____, 19____, unless terminated earlier as provided in paragraphs 9.2 and 9.3 below.

9.2 Termination. The Agreement shall terminate automatically without further liability to either party upon the earliest occurrence of any of the following events:

(1) The Government officially announces that the Solicitation has been cancelled.

(2) The Government enters into the Prime Contract with a party other than Prime but only if: (a) no challenge to the award of the Prime Contract, by administrative protest or litigation (or appeal of a decision on such protest or litigation), is available to any person or is pending and (b) the award of the Prime Contract is not overturned by such protest or litigation.

(3) The parties mutually agree in writing to terminate the Agreement.

(4) The Government forbids Prime to employ Sub as a subcontractor, or directs Prime to seek competitive bids, for Sub's Area of Responsibility, provided that Prime has taken all reasonable steps to convince the Government to reverse its decision, including but not limited to affording Sub an opportunity to make a direct presentation to the Government.

(5) An agency has suspended, debarred or otherwise declared Sub ineligible (as the preceding terms are defined in FAR Subpart 9.4) for contracting with any agency of the executive branch of the United States, and Prime gives written notice to Sub that the Agreement is terminated.

(6) The Government changes or deletes all or substantially all of the Solicitation requirements pertinent to Sub's Area of Responsibility, and either party gives written notice to the other party that the Agreement is terminated.

(7) Prime determines, in the exercise of its good faith business judgment, that it is unable to assemble a Project Team capable of competing successfully for the Project, and gives written notice to Sub that the Agreement is terminated.

(8) ____ days after the award of the Prime Contract, either party determines in its sole discretion that the parties, having negotiated as required by Section 4, are unable to agree on the terms and conditions of a subcontract, and gives written notice to the other party that the Agreement is terminated.

(9) The parties execute a definitive subcontract as provided in Section 4.

9.3 Default. Each party has the right to terminate this Agreement if the other party breaches or is in default of any material obligation hereunder, which default is incapable of cure or which, being capable of cure, has not been cured within five (5) business days after the day of receipt of written notice of such default from the nondefaulting party or within such additional cure period as the nondefaulting party may authorize. For purposes of this paragraph 9.3, a party will be considered in default of a material obligation if it becomes insolvent, makes a general assignment for the benefit of creditors, suffers or permits the appointment of a receiver for its business or assets, becomes subject to any proceeding under any bankruptcy or insolvency law, whether domestic or foreign, or has wound up or liquidated, voluntarily or otherwise.

9.4 Obligations Upon Termination. Upon termination or expiration of this Agreement for any reason, each party shall, at the option of the other party, immediately return to the other party or destroy, and certify to the other party the destruction of all Confidential Information and other documents, materials and properties of the other party, together with any copies thereof or notes thereon held by each for the purpose of performing this Agreement. The obligations imposed by this paragraph 9.4 shall survive termination or expiration of the Agreement.

SECTION 10: MISCELLANEOUS

10.1 Notice. All notices and other communications shall be in writing and shall be personally delivered or transmitted by certified United States Mail, return receipt requested, or by facsimile to the other party's Contract Representative at the address stated in Section 1, or to such other individual or address as may be specified by the other party in advance by

notice to the sending party. The effective date of any notice shall be deemed to be (i) the date of receipt if delivered personally or (ii) the date of transmission if delivered by mail or (iii) the date of receipt if delivered by facsimile.

10.2 No Joint Venture. This Agreement is not intended by the parties to constitute or create a joint venture, partnership or formal business organization of any kind, other than a contractor teaming arrangement as defined in FAR Subpart 9.6. The rights, responsibilities and obligations of the parties are limited to those stated in this Agreement. The parties shall be deemed to be independent contractors; one party cannot bind the other, and the employees of one party shall not be deemed to be employees of the other.

10.3 Remedies. Neither party shall be liable to the other for lost profits, special, punitive, indirect, incidental or consequential damages, even if advised in advance of the possibility of such damages, or upon any third party claim except as provided in Section 7. Remedies for breach of this Agreement are cumulative and may be exercised separately or concurrently. The exercise of one remedy shall not constitute an election of such remedy to the exclusion of others.

10.4 Governing Law. This Agreement shall be governed by, and construed in accordance with, the laws of the State of New York (excluding that State's conflict of law statutes), except for those portions of FAR or other procurement regulations that are incorporated herein by reference. Such provisions shall be interpreted in accordance with the decisions of the Federal Courts and the Boards of Contract Appeals.

10.5 Disputes. Any and all claims, controversies or disputes arising out of or in connection with this Agreement ("Disputes") shall be resolved in accordance with this paragraph 10.5. Neither party shall institute any action or proceeding against the other party in any court concerning any Dispute that is or could be the subject of a claim or proceeding under this paragraph 10.5. If any Dispute is not resolved by mutual agreement of the parties confirmed in writing, such Dispute shall be preliminarily decided in writing by Prime's Contract Representative, who shall furnish copies of his decision to the parties within 15 days of being notified of the Dispute. Such preliminary decision shall become final and binding on the parties 15 days after the parties are notified of the decision, unless within such 15 day period Sub submits a written demand for arbitration to the American Arbitration Association, in which case the Dispute shall be arbitrated pursuant to the Commercial Rules of the American Arbitration Association, before a single arbitrator. Prime's preliminary

determination will not bind the arbitrator and will not prejudice the legal position of either party in the arbitration. Any such arbitration shall be held in the Washington, D.C. metropolitan area. The arbitrator shall apply the law chosen by the parties to govern this Agreement and his or her resolution of the dispute shall be final and binding upon the parties. Judgment upon an award rendered by the arbitrator may be entered in any court of competent jurisdiction. Pending the final resolution of any dispute under this paragraph, both parties shall diligently proceed to perform this Agreement in accordance with Prime's preliminary decision. Costs of arbitration shall be shared equally by the parties subject to final apportionment by the arbitrator. Both parties' obligations under this paragraph 10.5 survive termination or expiration of this Agreement.

10.6 Insurance. During the term of this Agreement each party shall maintain insurance coverage of a kind and in an amount that is commercially reasonable, shall provide to the other party upon request certificates of insurance coverage and shall promptly notify the other party of the cancellation of any insurance policy maintained pursuant to this paragraph.

10.7 Employment Relationships. During the term of this Agreement and for a period of one year after its termination or expiration, neither party will solicit for employment or employ any technical, sales, marketing or management employee of the other, its parent corporation, if any, or any affiliate of the other, whose responsibilities relate to this Agreement. However, either party may hire an individual employed by the other who, without other solicitation, responds to employment advertising in the newspapers, trade publications or other public commercial media. The parties expressly acknowledge the materiality of this covenant.

10.8 Complete Agreement. This Agreement, including Exhibits A and B, constitutes the entire agreement between the parties and supercedes and renders null and void all prior agreements, understandings and proposals, whether oral or written, between the parties relating to the subject matter of this Agreement, including but not limited to all prior agreements dealing with the exchange of confidential information between the parties.

10.9 Severability. Any provision of this Agreement which is invalid, illegal or unenforceable in any jurisdiction shall, as to that jurisdiction, be ineffective to the extent of such invalidity, illegality or unenforceability, without in any manner affecting the remaining provisions of this Agreement in such jurisdiction or rendering that or any other provision of this Agreement invalid, illegal or unenforceable in any other jurisdiction.

10.10 Assignability. Neither party shall be entitled to assign this Agreement or its rights or obligations under this Agreement, whether voluntarily or by operation of law, except with the written consent of the other party. This Agreement shall inure to the benefit of and be binding upon the parties and their respective successors and permitted assigns.

10.11 No Waiver. A failure by either party to assert its rights under this Agreement shall not be deemed to be a waiver of such rights nor shall any waiver be implied from any act or omission. All waivers to be effective must be in writing. No waiver by either party with respect to any right shall extend its effect to any subsequent breach of this Agreement of like or different kind unless such waiver explicitly provides otherwise.

10.12 Amendments. This Agreement may be altered, modified, or amended only by a written agreement duly executed by both parties.

10.13 Counterparts. This Agreement may be executed in several counterparts, each of which shall be an original and all of which when taken together will constitute one agreement between the parties.

10.14 Conflicts of Interest.

a. Organizational Conflicts of Interest.

Sub represents and warrants that: (1) it is not precluded from performing the work contemplated by the Solicitation for the Project, either as the prime contractor or as a subcontractor, by virtue of an "organizational conflict of interest" clause (as that term is used in FAR Subpart 9.5) or similar clause in any past or present federal government contract or subcontract; (2) to the best of its knowledge and belief, the facts and circumstances of its past and present work under federal government contracts and subcontracts do not disqualify or limit it and, would not disqualify or limit Prime or any other team member, in proposing for or performing work on the Project; and (3) it has no reason to believe that the Government will contend that it has an organizational conflict of interest that would disqualify or limit it, Prime or any other team member in proposing for or performing work on the Project.

b. Former Government Employees.

Sub represents and warrants that: (1) it does not now employ and has not hired and will not employ or hire during

the term of this Agreement, any former government employee, as an employee or independent contractor in violation of any law or regulation; and (2) except for those individuals specifically disclosed in writing to Prime prior to execution of this Agreement (including as much detail regarding such individuals' prior government employment as Prime desires), it does not now employ, has not hired and will not employ or hire, without the prior written authorization of the Prime (which will not be unreasonably withheld), during the term of this Agreement, any former government official or employee or other individual classified pursuant to 41 U.S.C. § 423 as a procurement official ("Procurement Official") as an officer, agent, employee, independent contractor or other representative, and that it has not offered, promised or discussed such future employment, business opportunity or the exchange of any other thing of value with a government official or employee or Procurement Official who had any involvement, directly or indirectly, in any aspect of the procurement for which the Solicitation was issued.

c. Non-Public Information.

Sub represents and warrants that it is not wrongfully or illegally in the possession of any of the following information regarding the Project:

- (1) confidential or proprietary information of any of the known or expected competing offerors or suppliers.
- (2) any non-public information whether marked or unmarked which would give Prime or Sub an unfair competitive advantage regarding the Project.
- (3) any non-public information which is marked by the government as classified, source selection sensitive, or for official use only or any other non-public information whether marked or unmarked the possession of which would undermine the integrity and/or successful completion of the procurement.

d. Certifications.

Within ten (10) days of Prime's written request, Sub agrees to provide Prime with certificates concerning the matters discussed in this Section 10.14.

10.15 Force Majeure. Neither party shall be held liable for failure or delay in performance of any of its obligations under this Agreement because of natural disaster, actions or decrees of governmental bodies or civil disturbances or other causes, if the same are beyond its control and without its fault or negligence (the "Force Majeure Event"). In the event either party expects or experiences such a delay or failure, it shall give prompt notice to the other. If a Force Majeure event should last more than fifteen (15) business days, the

party whose performance has not been impaired on account of the Force Majeure Event may, at its option, terminate this Agreement without further liability of either party to the other, except as provided for in Section 9.4.

The parties have executed this Agreement as of the date specified below. Each party represents and warrants that its respective signatory is duly authorized to execute this Agreement on its behalf.

_____	PRICE WATERHOUSE
By: _____	By: _____
Name: _____	Name: _____
Title: _____	Title: _____
Date: _____	Date: _____

1757R

EXHIBIT A

SUB'S AREA OF RESPONSIBILITY

[PW to complete]

EXHIBIT B

SUBCONTRACT TERMS AND CONDITIONS

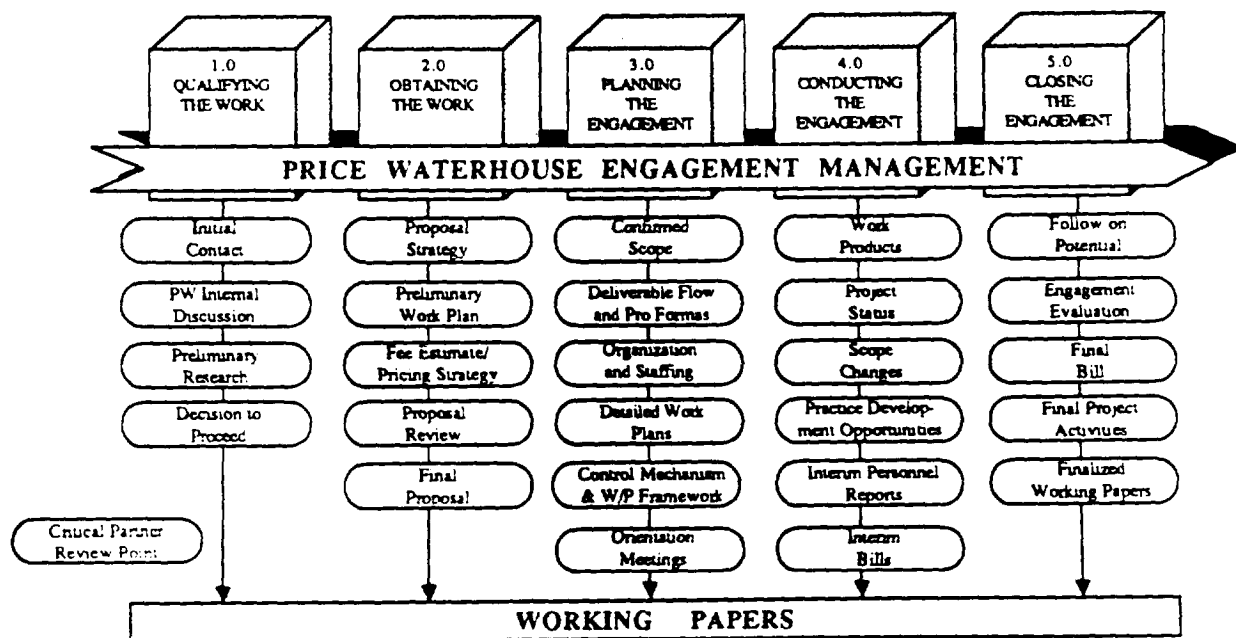
The subcontract will contain provisions implementing the following agreements reached by the parties:

[PW to complete]

APPENDIX B

Overview of Price Waterhouse Guideline for Engagement Management (GEM)

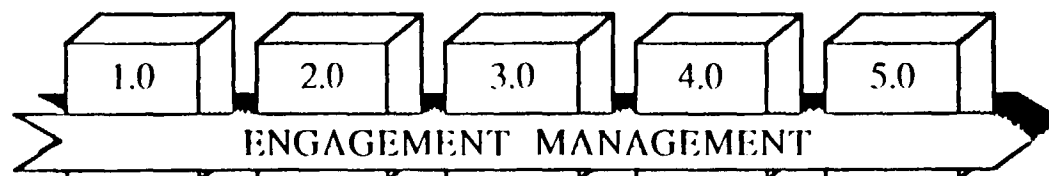
GUIDELINE FOR ENGAGEMENT MANAGEMENT (GEM)



Price Waterhouse



PRICE WATERHOUSE **GUIDELINES FOR ENGAGEMENT MANAGEMENT**



PRICE WATERHOUSE - "Expect More From Us"

Price Waterhouse has developed these Guidelines for Engagement Management (GEM) to consistently and effectively manage consulting engagements. These guidelines are the product of over 100 years of successful consulting engagements and are unmatched by any other "Big 8" accounting/consulting firm. We present this overview of GEM to demonstrate the commitment of Price Waterhouse to consulting excellence. These Guidelines for Engagement Management are an important part of our ongoing effort to remain the nation's premier business services firm.

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INTRODUCTION

PURPOSE/OBJECTIVES

The primary purpose of the Guidelines for Engagement Management (GEM) is to support Price Waterhouse professionals who have the responsibility for managing consulting engagements. GEM is intended to be the primary reference document for conducting consulting assignments, from qualifying prospects through the conclusion of the engagement.

The appropriate application of GEM can result in several benefits:

- Enhanced Delivery of High-Quality, Distinctive Professional Service
- Improved Cost-Effectiveness of Consulting Assignments
- Improved Effectiveness on Proposal Efforts
- A Common Management Language for All Price Waterhouse Consulting Engagements

GEM provides a proven, structured engagement management methodology with the flexibility to accommodate a wide variety of consulting assignments. As a firm-wide standard, GEM must cope with increasing engagement complexity, multi-disciplinary staffing, geographic mobility of staff, subcontractor/joint venture relationships and other critical demands. GEM is designed to meet this challenge by creating a standard that can evolve to meet the future needs of our practice. As illustrated in Exhibit I, GEM is the common denominator that joins a wide variety of related activities and resources to promote effective engagement and management.

APPLICABILITY

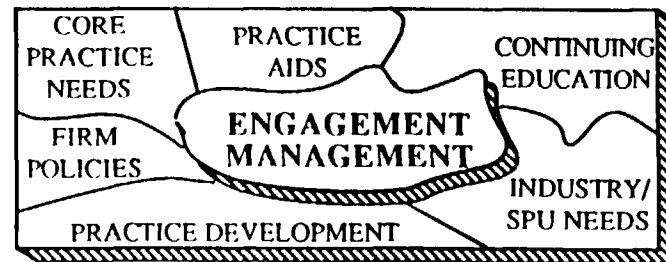
GEM is the standard to be used on all consulting assignments. Because of the wide variation in the nature and scope of PW

consulting engagements, provision has been made to allow for local practice requirements (e.g., area, office, government consulting, etc.). Although there may be some differences, it is expected that GEM will be applied in an appropriate manner on all consulting assignments.

SCOPE

The scope of GEM includes a broad range of activities from the initial efforts to qualify a prospect through the final steps necessary in closing an engagement. However, the major emphasis in GEM is on the engagement management responsibilities that arise in connection with a consulting assignment. These activities include planning, administration, control, and documentation of an engagement. Although references to Practice Aids are included, GEM does not prescribe the manner in which the actual work is performed on any specific project. Similarly, GEM is not a replacement for existing policies and procedures such as those contained in the Policy and Administrative References (PAR) and the Administrative Information Manual (AIM).

EXHIBIT I



ENGAGEMENT MANAGEMENT IN THE CONSULTING ENVIRONMENT

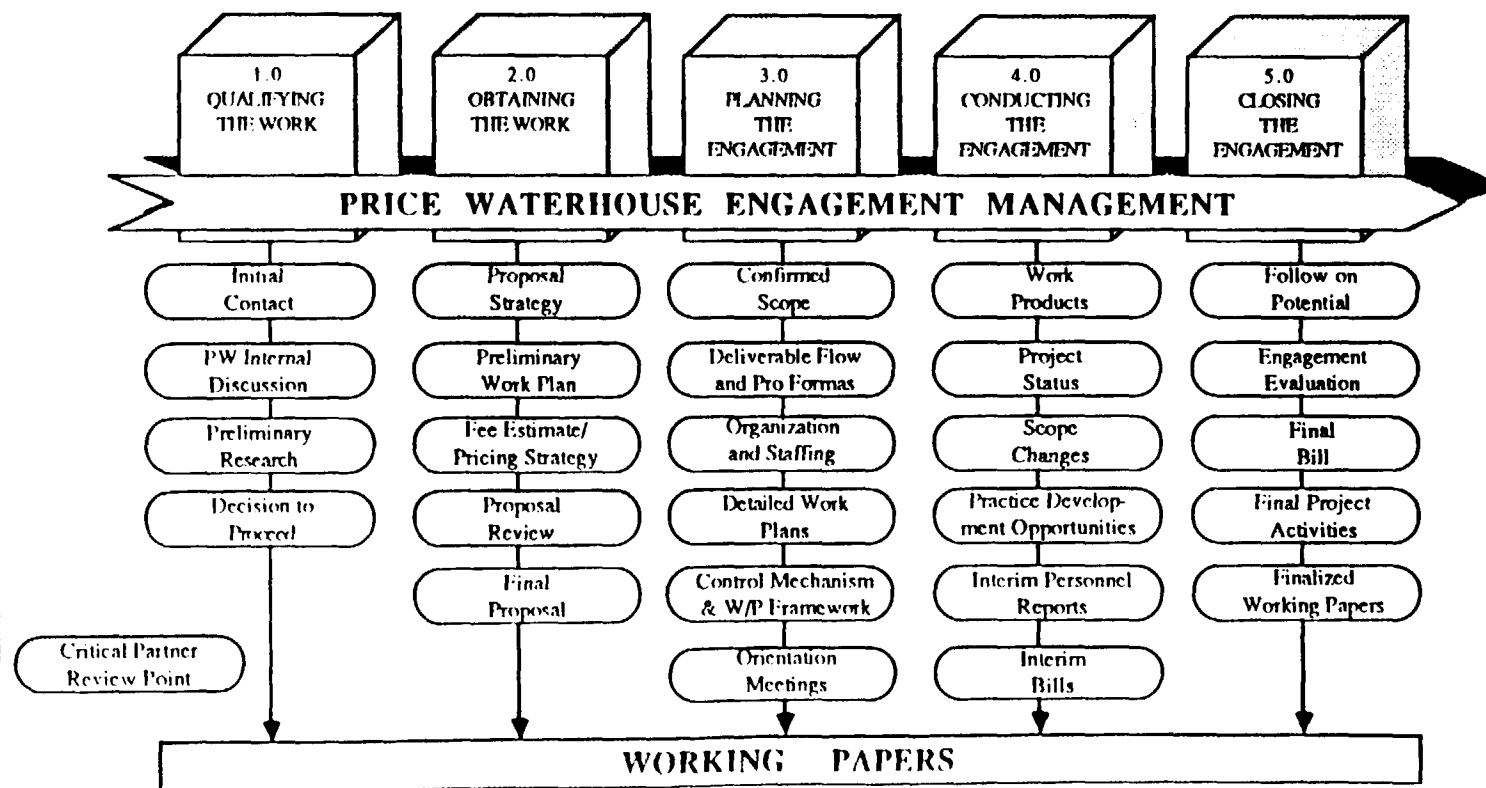
THE PRICE WATERHOUSE CONSULTING PROCESS

Although services provided to our clients may vary in scope, functionality, and complexity, the procedures performed to complete each engagement are quite similar. An engagement begins when practice development efforts result in identifying an opportunity and concludes with clients satisfied by the quality of the service delivered. This is accomplished through client

relationship management, human resource management, and effective engagement management, all of which are important to the success of any project.

As illustrated in Exhibit II, engagement management is the common thread that integrates the five fundamental phases of the consulting process.

EXHIBIT II

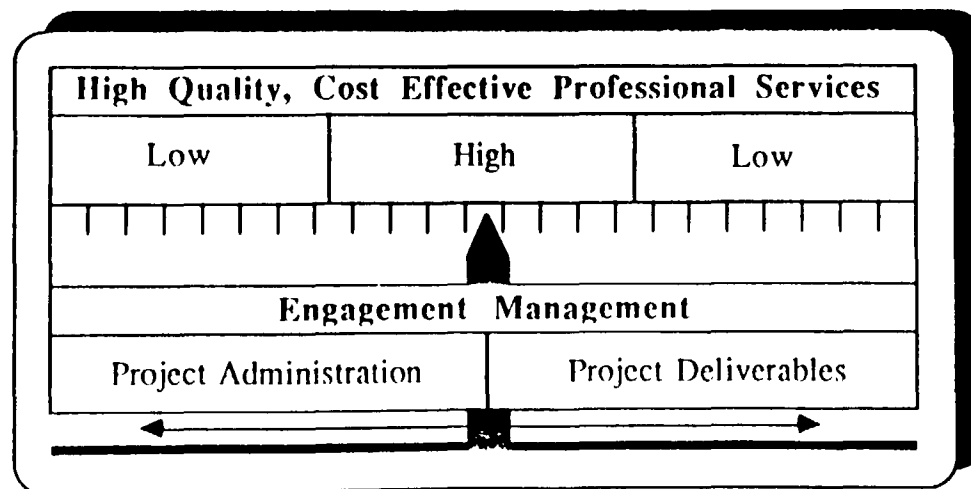


BALANCED APPROACH

Proper engagement management ensures that resources are effectively utilized and that high quality deliverables are developed on time. As shown in Exhibit III, project administration and deliverables management are the two critical components of effective engagement management. The activities associated with planning, monitoring, and controlling the engagement comprise the project administration function. Deliverables management involves structuring the project to provide a logical flow of work products with a constant focus on final deliverables.

An inappropriate balance towards one or the other component will be less effective than a balanced approach. For example, too large an emphasis on the mechanics of managing a project may impact the completion and quality of the work products. On the other hand, exclusive concentration on deliverables may jeopardize the engagement schedule. The two components must work closely together to ensure that resource utilization is maximized and that quality professional consulting services are delivered.

EXHIBIT III



USING THE GUIDELINES

RISK ASSESSMENT

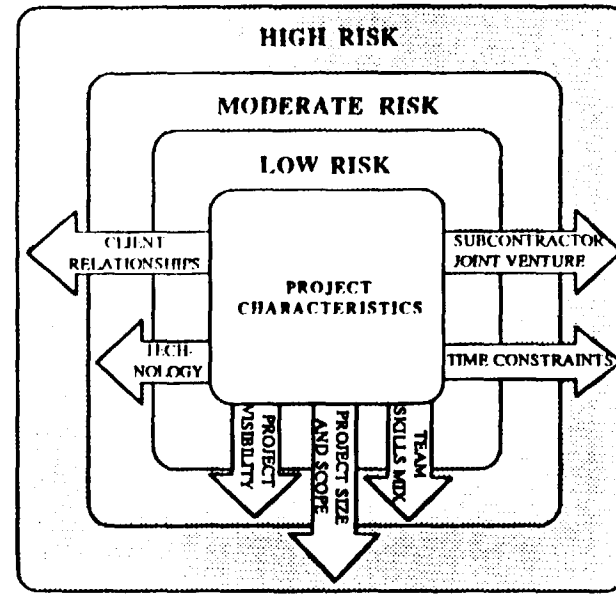
GEM provides an overall framework for effectively planning, monitoring, and controlling consulting engagements. While the guidelines are intended to facilitate engagement management, they are not a substitute for the sound professional judgment which must be employed in their application. Ultimately, it is the judgment of Price Waterhouse professionals that plays the key role in successfully executed engagements.

The activities, helpful hints, and suggested forms contained in Sections III and V of the GEM Manual represent practical, field-tested techniques. The application of these techniques should provide the basis for more effectively managing the key risk factors that impact any engagement. Typical risk factors include:

- Project Size and Scope
- Project Visibility
- Team Skills Mix
- Time Constraints
- Technology
- Client Relationships
- Subcontractor/Joint Venture Arrangements

The first step in managing these engagement risk factors is to identify the type of risk associated with a specific project. The second step is to identify the level of risk (i.e., low, moderate, or high). The type and levels of risk associated with our consulting engagements are illustrated in Exhibit IV. This exhibit illustrates an engagement where different levels of risk are associated with the various risk factors identified for the project. The overall risk assessment is directly related to the specific characteristics of that project. Depending on the particular engagement, different factors will drive the assessment. Once an assessment of the overall risk is made, it is then possible to develop a cost-effective approach for managing the engagement using GEM.

EXHIBIT IV



DEVELOPING AN ENGAGEMENT MANAGEMENT APPROACH USING GEM

The guidelines contained within GEM are grouped into three major categories:

- **Mandatory (Documentation Required)** - An activity which is considered critical to effectively delivering services. A decision not to perform the activity requires an explanation in the working papers.
- **Recommended** - An activity which is considered beneficial on the majority of engagements. Consideration should be given to performing recommended activities as an engagement moves into the moderate or high risk categories. Conversely, they may not be necessary on low risk engagements.
- **Desirable** - An activity which may prove useful on certain engagements. Consideration should be given to performing desirable activities on certain higher risk engagements.

Based on the risk assessment, professional judgment must be applied in developing the specific approach to engagement management using GEM.



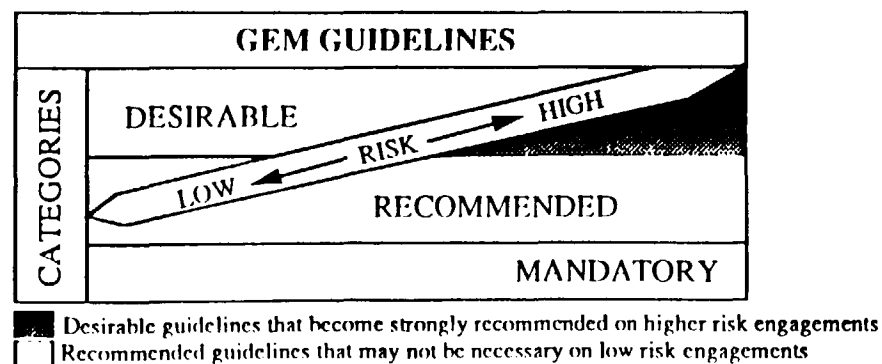
USING THE GUIDELINES

Mandatory activities are applicable to all engagements without regard to the overall risk assessment. In the event a mandatory activity is not or cannot be performed, this exception must be documented in the working papers. For example, work plans are mandatory on all engagements. If one is not prepared there must be an explanation for its absence in the working papers.

Based on professional judgment, there is a considerable degree of flexibility associated with conducting recommended and desirable activities, as illustrated in Exhibit V. For example, on a high risk engagement the majority of the recommended activities and a number of the desirable activities would typically be performed. On a low risk engagement many recommended and desirable activities would not be applicable. Risk must be reassessed throughout all stages of the project.

A key element of the Quality Control Review (QCR) process will be to review the decisions made in selecting those aspects of GEM to be used. Accordingly, it is expected that the detailed guidelines presented in Section III of the GEM Manual will be applied using the decision criteria discussed here.

EXHIBIT V



ORGANIZATION OF THE GUIDELINES

The guidelines for each phase share a common format for presenting key information:

- The purpose/objectives of each phase are discussed
- A guideline summary listing the key activities and critical partner review points is provided
- Mandatory activities are highlighted for quick reference (recommended and desirable activities can be found in the GEM Manual)
- Key helpful hints are provided

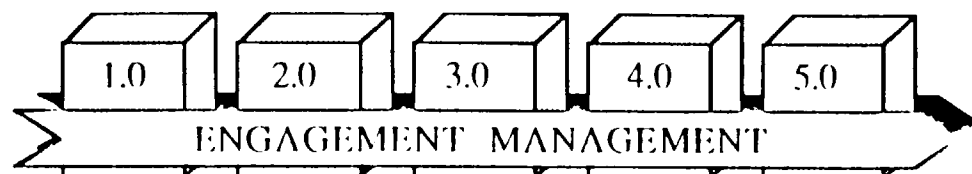
The GEM guidelines also contain recommendations that indicate the usage and documentation requirements as previously defined on page 6:

- (M) Mandatory (Documentation Required)
- (R) Recommend
- (D) Desirable

References to firm policies, Practice Aids and Continuing Education can be found in Appendix A of the GEM Manual.



PHASE 1.0 - QUALIFYING THE WORK



PURPOSE/OBJECTIVE

The consulting process begins with Phase 1.0 - Qualifying the Work. During this phase, potential work is further investigated to determine if the required investment in resources will result in adequate returns in service to the client and profitability for the firm.

Potential work can be recognized through various efforts, such as:

- Follow-On Work from Present Engagements
- Opportunities Identified During the Audit Process
- Requests for Proposal
- Direct Contacts
- Referrals

Once identified, a preliminary analysis of the requirements of the engagement, background of the prospective client, potential competition and the firm's qualifications must be conducted to ensure that Price Waterhouse and the client will benefit from further pursuit of the work. While research and analysis must be thorough and accurate, careful management of this phase must occur to provide for efficient and cost-effective use of resources and to allow for adequate time to prepare the appropriate response to the inquiry.

If the decision is to proceed, the next phase of the consulting process begins, Phase 2.0 - Obtaining the Work. If the decision is not to proceed, the prospect is so informed and the process is concluded.

GUIDELINE SUMMARY

- 1.1 Record Initial Contact And Develop an Understanding of the Service to be Provided
- 1.2 Discuss Inquiry/Opportunity with the Appropriate PW Personnel
- 1.3 Conduct Preliminary Research
- * 1.4 Finalize Decision to Proceed

*** CRITICAL PARTNER REVIEW POINT**

MANDATORY ACTIVITIES

- Approval to Proceed for Selected Engagements
- Appropriate PW Personnel Contacted
- Pre-Acceptance Investigation Form (non-clients)
- Partner Review and Decision
- GEM Activity Planning and Review Summary Completed (Phase 1.0) if the Decision is to Proceed

KEY HELPFUL HINTS

Identify the key decision makers at the prospective client
Research PW EXPERTISE System, local office/area resumes, and local/office area engagement summaries and contact other offices using On-Tyme messages to identify key PW personnel and recent relevant engagements

Identify key PW Practice Aids. Practice Aids demonstrate that we have proven methodologies (e.g., SMM), extensive experience and effective solutions

Determine if the prospective client is considering other sources, either internal or external



PHASE 2.0 - OBTAINING THE WORK



PURPOSE/OBJECTIVE

At the conclusion of Phase 1.0 - Qualifying the Work, a decision was made to respond to the inquiry. In Phase 2.0 - Obtaining the Work, technical and marketing efforts are combined to convince the prospective client of the value of selecting Price Waterhouse.

The primary output of this phase is a response that relates Price Waterhouse resources, experience, expertise, and approach to the client's specific needs. The guidelines, in conjunction with firm-developed Practice Aids for specific technical areas and Continuing Education courses for marketing, proposal writing, and communications, provide a foundation for developing a technically sound, comprehensive and competitive response. It is crucial that the response be reviewed throughout the development effort since the response document may represent a binding contract with the client and with subcontractors or joint venture partners, if proposed.

Once the instructions to proceed are obtained from the client, Phase 3.0 - Planning the Engagement begins. Otherwise the consulting process is concluded with Phase 2.0.

GUIDELINE SUMMARY

- 2.1 Develop a Strategy for Obtaining the Work
- 2.2 Develop Engagement Work Plan
- 2.3 Develop the Fee Estimate and Determine an Engagement Pricing Strategy
- * 2.4 Prepare and Review Proposal Documents
- 2.5 Issue and Follow-up on Proposal

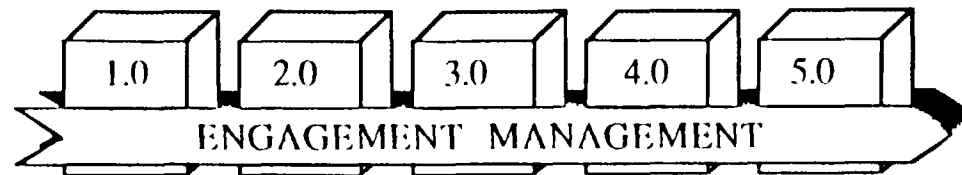
*** CRITICAL PARTNER REVIEW POINT**

MANDATORY ACTIVITIES

- Partner Review of Strategy for Obtaining Work
- Work Plan Developed and Partner Review Obtained
- Level of Effort and Expenses Estimated
- Pricing Strategy, Quote to Client, and Partner Approval
- Draft Proposal Prepared and Reviewed
- Final Proposal Distribution
- Revision Impact Analysis
- Scope/Work Plan/Fee Revisions; Amendments Issued
- Area MCS Engagement Schedule and Local Office Advice of Business Updated with Client Decision
- GEM Activity Planning and Review Summary Completed (Phase 2.0)
- Proposal Working Papers Completed



PHASE 2.0 - OBTAINING THE WORK



KEY HELPFUL HINTS

- Consider Combining Staff From Local Office With Area, SPU, Audit, Tax, Subcontractor, Joint Venture, etc., When Determining Appropriate Skill Mix
- Consider Use Of Walk-through Document to Minimize Proposal Development Effort and Response Time
- Consider a Phased Approach to Enhance Client Acceptance
- Consider Obtaining a Verbal Commitment and Issuing Only a Confirming Engagement Letter to Reduce Overall Proposal Effort
- Consider the Use of PC-Driven Graphics Package to Enhance Proposal Presentation
- Consider Using Automated Support Tools (E.G., Lotus) for Tailoring the Work Plan and Preparing an Estimate
- Indicate Client Participation Assumptions in the Proposal
- Address Critical Proposal Topics (PW Distinguishing Factors, Understanding of the Problem, Approach, Work Plan, Timetable, Benefits, Qualifications, Client Participation, PW Experience, Deliverables, Executive Summary, etc.)
- Tailor Resumes and Firm Qualifications to the Requirements of the Engagement
- Review Proposal Draft with Client and Refine Draft



PHASE 3.0 - PLANNING THE ENGAGEMENT



PURPOSE/OBJECTIVE

At the conclusion of Phase 2.0 - Obtaining the Work, instructions were received from the client to proceed with the proposed engagement. Phase 3.0 - Planning the Engagement, involves completing the necessary level of detailed, up-front planning to ensure that the engagement is conducted effectively and efficiently and that project objectives are met.

Pre-engagement planning represents "pro-active" management. It entails such activities as developing a detailed work plan, deliverables flow, and project management methodology. A detailed work plan identifies the level and timing of resource requirements. The deliverables flow ensures that all efforts are focused on the project deliverables. The project management methodology establishes an "early warning" system to indicate if the project begins to move off course.

Overall, the effort devoted to initial planning reduces the risk of unplanned scope adjustments, significantly revised work products, and client misunderstandings. All projects, no matter how small or unique, can benefit from an appropriate degree of preliminary planning. When applicable, it is important to follow the methodology outlined in the related firm Practice Aid to ensure the use of successfully proven approaches and techniques.

The plans, methodologies and mechanisms established in this phase are expected to be used to monitor status in Phase 4.0 - Conducting the Engagement.

GUIDELINE SUMMARY

3.1 Review and Confirm Scope with Client

* 3.2 Develop Work Product Flow and Pro Forma Formats

3.3 Finalize Engagements Organization, Staffing, and Logistics

* 3.4 Prepare Engagement Work Plans at Detail Level

* 3.5 Select Project Monitoring and Control Methodology and Define Working Paper Organization

3.6 Conduct Orientation Meetings

*** CRITICAL PARTNER REVIEW POINT**

MANDATORY ACTIVITIES

- Documented Changes
- Pro Forma, Interim and Final Work Products/Deliverables and Partner Reviews
- Detail Work Plan
- Partner Reviews of Detail Work Plan
- Project Monitoring Approach
- Partner Review of Monitoring Approach



PHASE 3.0 - PLANNING THE ENGAGEMENT

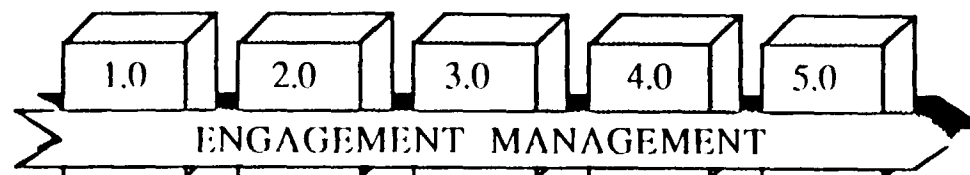


KEY HELPFUL HINTS

- Reconfirm Both PW and Client Roles and Responsibilities
- Plan for Interim Deliverables in Order to Confirm Project is on Track and to Measure Client Satisfaction
- Ensure That Client Understands Cost Trade-offs Involved in Preparing a Formal Report and Discuss Using Alternative Formats for Reporting Results
- Fieldwork and Interim Work Products Should "Roll Up" Into the Final Deliverables. Fieldwork and Final Report Preparation Should Merge; Development of Final Reports Should Not Be a Separate and Distinct Process
- Working at the Client Site Improves Productivity, Enhances Client Relationships, and Increases Awareness of the Client Situation
- Consider the Use of Productivity Enhancers (Automated Support Tools, Practice Aids, Etc.) when Developing Detail Work Plans
- The Intent of the Engagement Management Methodology is to Serve as an "Early Warning" System for Potential Cost Overruns, Work Product Quality Deficiencies, and Due Date Slippage
- Consider Using One of the Following Automated Tools for Project Management and Monitoring:
 - Practice Aid
 - Electronic Spreadsheet Software
 - Project Management Software



PHASE 4.0 - CONDUCTING THE ENGAGEMENT



PURPOSE/OBJECTIVE

The primary objective of Phase 4.0 - Conducting the Engagement, is to complete the engagement in accordance with the detailed plans and schedules established in Phase 3.0 - Planning the Engagement. It is during this phase that MCS professionals have the opportunity to demonstrate their unique technical and project management skills.

During this phase of the consulting process, management activities focus on monitoring and controlling all aspects of the project. The work products are monitored to ensure that final deliverables meet contractual requirements of the engagement, are produced in a timely manner, and contain quality results. Project status is continually monitored to identify potential cost or schedule overruns or the need for additional resources. Modifications to the original work plan may occur to accommodate scope revisions, change requests, and practice development opportunities. It is during this phase that firm-wide Practice Aids are used to more effectively and consistently complete the engagement.

Throughout this phase, a variety of documents are prepared and filed in the working papers to document the events of the engagement. Through effective planning, working papers are developed automatically as part of the process. In Phase 5.0 - Closing the Engagement, the working papers are finalized, the final invoice is delivered to the client, and the remaining administrative responsibilities are completed.

GUIDELINE SUMMARY

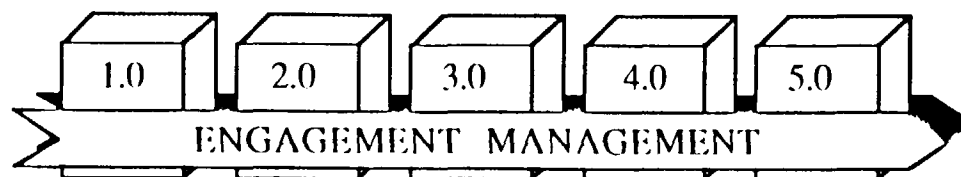
- 4.1 Execute the Work Plan
- * 4.2 Monitor and Report Project Status
- * 4.3 Identify and Address Scope Changes
- 4.4 Identify and Pursue Practice Development Opportunities
- 4.5 Prepare and Deliver Interim Performance Reports/Counseling
- * 4.6 Prepare and Collect Interim Bills
- * **CRITICAL PARTNER REVIEW POINT**

MANDATORY ACTIVITIES

- Work Plan Tasks Conducted and Documented
- Critical Issues Identified and Resolved
- Client Review of Key Deliverables
- Final Client Report Prepared and Issued
- Area MCS Engagement Schedule Updated
- Client Contact Maintained
- Internal Quality Reviews
- Partner/Client Project Status Reviews
- Second Partner and Technical Reviews
- Work Plan Revisions and Partner Review
- Scope Changes Discussed with Partner and Client Approval Obtained
- Interim Performance Reports/Counseling Completed
- Bills Prepared and Processed



PHASE - 4.0 CONDUCTING THE ENGAGEMENT

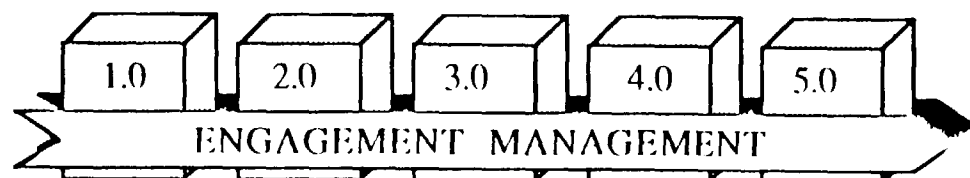


KEY HELPFUL HINTS

- Consider the Use of Practice Aids to Assist in the Completion of Tasks When Appropriate, Conduct as Much Work as Possible at the Client Site
- Address Anticipated Problems Early With the Partner; Surprises Ultimately May Reduce and Restrict the Number of Recovery Options
- Include Audit Partner, Audit Manager, and Other Key Personnel in Important Meetings and Routing Distributions
- Informal Counseling During an Engagement is Critical to the Development of MCS Staff and Should Be Encouraged
- Keeping the Client Informed Using Regular Status Reports Enhances Client Relations and Engagement Success; Content Of Status Reports Should Include: Accomplishments, Future Plans, Schedule Status, Findings and Observations, and Outstanding Critical Issues
- Attempt to Develop Relationships With Client Executives Who Are Outside the Direct Area of the Engagement



PHASE 5.0 - CLOSING THE ENGAGEMENT



PURPOSE/OBJECTIVE

The consulting process for an engagement is concluded with Phase 5.0 - Closing the Engagement. The objectives of this phase are to complete final administrative responsibilities and to follow up on additional work potential. If the guidelines identified for prior phases were applied effectively, the administrative responsibilities of this phase can be completed with minimal incremental effort.

GUIDELINE SUMMARY

5.1 Evaluate Follow-on Work Potential

5.2 Evaluate the Engagement and Prepare Performance Reports

* 5.3 Prepare Final Bill and Close Charge Code

5.4 Complete Final Project Activities

* 5.5 Finalize Working Papers

*** CRITICAL PARTNER REVIEW POINT**

MANDATORY ACTIVITIES

- Engagement Summary Prepared and Project Economics Evaluated
- Performance Reports Prepared and Counseling Conducted
- Final Bill Prepared and Issued; Charge Code Closed
- Unplanned SVA Summarized and Explained
- Final Report Transmitted
- Area MCS Engagement Schedule Updated
- GEM Activity Planning and Review Summaries Completed (Phases 3.0, 4.0, 5.0)
- Working Papers Completed and Sent to Records Department

KEY HELPFUL HINTS

- Identify where modifications to existing Practice Aids or development of new Practice Aids would have been helpful during this engagement
- Timely preparation and review of Performance Reports are essential to ensure an appropriate development process
- Recognize special and outstanding assistance from the client
- Providing copies of reports to National MCS Information Services promotes greater firm-wide resource sharing



WORKING PAPERS

OVERVIEW

If the guidelines for each phase have been effectively applied on an engagement, then working papers should be a natural by-product created during the project, with little incremental effort. When working papers are addressed throughout an engagement, rather than at the very end, they become an integral part of the project and should be a useful tool.

Documentation of key project events, activities, and results begins with the initial inquiry or contact and concludes with the completion of the engagement. There are three primary types of documentation:

- Project Scope and Contractual Obligations
- Planning, Monitoring, Control, and Review Activities
- Work Product/Deliverables Development

The contents of each set of working papers will vary according to the specific engagement. The GEM approach to working papers has certain standardized features but also allows for flexibility based on the professional judgment of the staff involved.

The forms described in Section V of the GEM Manual can be considered adequate documentation for the majority of engagements. If the suggested GEM forms are not used, the alternative documentation should contain, at a minimum, the same key information as the related GEM form.

MANAGER'S ADMINISTRATIVE FILE

A standard Manager's Administrative File has been established for use on all consulting engagements. This general file was developed to handle a considerable variety of projects and is based on a number of similar files previously used throughout the practice. The structure of the Manager's Administrative File is not intended to be so rigid as to inhibit the effective completion of the engagement. Rather, it is intended to provide a practical framework to ensure that all critical engagement management activities are documented or addressed in some manner. It is expected that the Manager's Administrative File will be used with local practice area/office/SPU requirements added to it as necessary.

The Manager's Administrative File can serve as a proposal file if instructions to perform the engagement are not received. If we do proceed with the engagement, the Manager's Administrative File would sit on top of all of the other files and provide project managers, partners, and the QCR team with an "executive summary" of the engagement.

As with all guidelines contained in GEM, a proper level of judgment must be applied in making the Manager's Administrative File a useful tool. This is illustrated in Exhibit VI. On smaller jobs, for example, all of the working papers, including the Manager's Administrative File, may fit into a single bundle. In addition, certain sections of the file may not be necessary. Provision has been made to allow for non-use of one or more sections with a simple notation. However, even if a section is not used the divider should not be removed. Suggested forms that have been used may be removed from the file. The Manager's Administrative File must remain intact because its sections are linked to the QCR process.

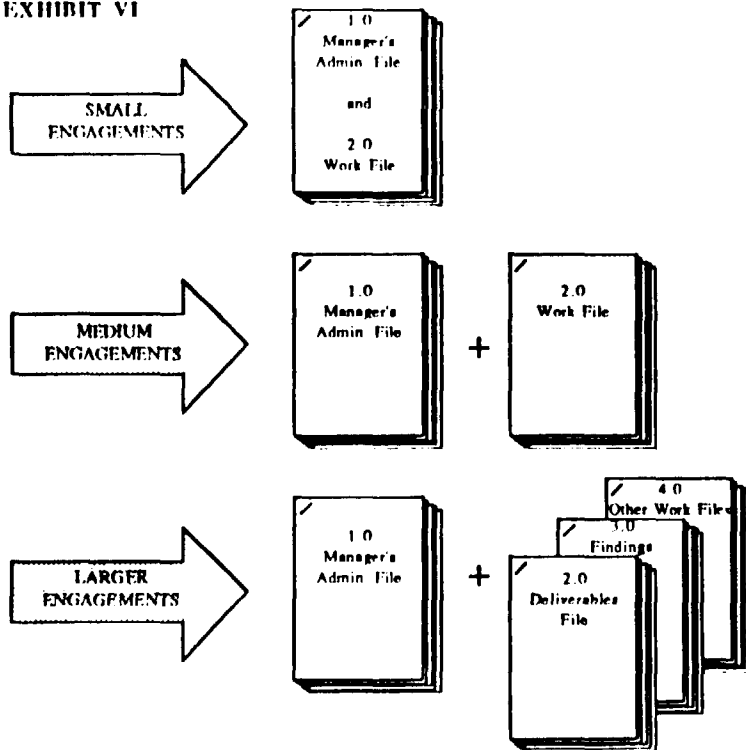


WORKING PAPERS

ORGANIZATION

The working papers should be organized so that they mirror the work plan and the flow of deliverables. There is both a logical and physical organization to the working papers. Related materials are grouped into logical files during the engagement. At the end of the project, files will be physically grouped into bundles and then placed in envelopes to facilitate filing and storage. A bundle may contain one full file, a part of one file, or several smaller files.

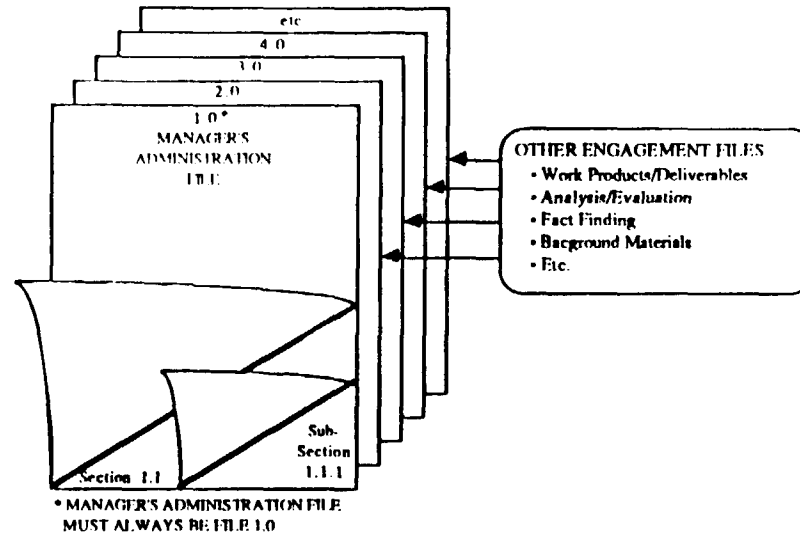
EXHIBIT VI



As illustrated in Exhibit VII, files are always numbered in 1.0, 2.0 sequence, with the Manager's Administration File always designated as 1.0. Sections within files are always designated with the number and decimal in a 1.1, 1.2, 1.3 sequence. Sub-sections are simply a more detailed breakdown of a section and are designated with additional decimals in a 1.1.1, 1.1.2, 1.1.3 sequence and physically separated with a Working Paper Section Divider Sheet.

CONTENTS

EXHIBIT VII



Any materials included in the working papers may become public. Some areas of potential concern include:

- Intemperate Language - colorful prose should be avoided particularly with respect to client activities or personnel
- Extraneous Materials - items collected but not used for any purpose should not be kept
- Confidential Materials - access should be carefully controlled and on certain engagements materials should be kept separately
- To-Do Lists - should be destroyed when completed
- Critical Comments After the Fact - should not be included in the working papers
- Time and Expense Reports - many such reports contain information on other clients which should not be included
- Work in Process Ledgers - WIPs should not be kept in the working papers
- Performance Reports - should not be kept in the working papers



INDEX OF SUGGESTED FORMS

GEM #	PW FORM #	NAME	GEM #	PW FORM #	NAME
1	788	GEM Activity Planning and Review Summary	13		Short Interval Schedule
2		Memorandum for the Files	14		Daily Log
3		Prospective Engagement Summary	15		Work Plan Status - Summary of Hours, Fees, Expenses and Physical Completion
4	692	Advice of Business Activity			Task/Output Completion Status
5	434	Pre-Acceptance Investigation	16		Critical Issue Log
6		Overview of Major Tasks	17		Critical Issue Sheet
7		Task/Output Work Plan and Schedule	18		Billing, Budget, and SVA Analysis
8		Overview of Key Work Products	19		Engagement Billing Summary
9		Detailed Fee Estimate	20		Working Paper Index
10	789	Pricing Strategy Worksheet for MCS Engagements	21		Working Paper Section Divider
11	790	Planned Service Value Adjustment (SVA) Summary Form	22		Client Report Information Form
12-P	791	MCS Second Partner Review (Proposals)	23	175	MCS Proposal/Engagement Summary
12-E	791	MCS Second Partner Review (Engagements in Process)	24	516	



CLIENT NAME: _____

GEM FORM 13

ENGAGEMENT TITLE: _____

SHORT INTERVAL SCHEDULE

MAJOR TASK: _____

TASK/SUB-TASK	RESP	DATE										STATUS



CLIENT NAME: _____

ENGAGEMENT TITLE: _____

STAFF MEMBER: _____

DAILY LOG

[illegible]

ENGAGEMENT TITLE: _____

SUMMARY OF HOURS, FEES, EXPENSES, AND PHYSICAL COMPLETION

PERIOD: _____ to _____

PHASE/MAJOR TASK/ SUB-TASK	TOTAL HOURS																								ESTIMATED COMPLETION DATE	% OF BUDGET EXPANDED	PHYSICAL % COMPLETE					
	BUDGET (By Staff Member)						CURRENT PERIOD (By Staff Member)						CUMULATIVE TO DATE (By Staff Member)						ESTIMATE TO COMPLETE (By Staff Member)													
						101						101							101									101				
TOTAL HOURS																																
BILLING RATES																																
TOTAL FEES																																
OUT-OF-POCKET EXPENSES																																
OTHER EXPENSES (ADMIN., ETC.)																																
TOTAL CHARGES																																

* NOTE: Based on comparison of % of budget expended vs. physical % complete, determine need to develop a revised estimate to complete.

* NOTE: Based on comparison of % of budget expended vs. physical % complete, determine need to develop a revised estimate to complete.



CLIENT NAME: _____

GEM FORM 16

ENGAGEMENT TITLE: _____

TASK/OUTPUT COMPLETION STATUS
AS OF: _____

PHASE/MAJOR TASK	% COMPLETE AS OF LAST STATUS REPORT	% COMPLETE CURRENT STATUS	ESTIMATED COMPLETION DATE	COMMENTS
SUMMARY OF STATUS:				



CLIENT NAME: _____

ENGAGEMENT TITLE: _____

CRITICAL ISSUE LOG

[illegible]

CLIENT NAME: _____

ENGAGEMENT TITLE: _____

CRITICAL ISSUE SHEET

ISSUE NO.	ISSUE TITLE	DATE

DESCRIPTION OF ISSUE:

ALTERNATIVES:

RECOMMENDATION AND RATIONALE:

IMPACT ASSESSMENT (Hours and Schedule):

RESOLUTION:

PREPARED BY: _____ (Date) APPROVED BY: _____ (Date)



APPENDIX C

Resumes

**Price Waterhouse
Resumes**

CLASS I

RANGE OF EXPERIENCE

His experience includes work for a number of clients in a variety of large and small businesses on engagements involving EDP planning projects; information systems effectiveness reviews; data security and control audits; hardware, software and application feasibility studies; systems design, programming, and implementation of several accounting, financial reporting and management information systems; and management of large projects. He also has supervised and participated in a number of public sector engagements.

EDUCATION

M.S., Electrical Engineering, Clarkson University.

B. Tech. (Honors), Electrical Engineering, Indian Institute of Technology, India.

Certified Management Consultant (CMC)

Certified Data Processor (CDP)

Certified Information Systems Auditor (CISA)

EMPLOYMENT HISTORY

Price Waterhouse: Partner, Office of Government Services, Advanced Information Technology Group, Washington, D.C. July 1983 to date; Senior Manager, July 1980 to June 1983; Manager, July 1977 to June 1980; Consultant, March 1974 to June 1977.

Electronic Data Systems Corporation: Systems Manager, 1973 to 1974; Special Projects, 1973; Project Manager, 1971 to 1973; Systems Engineer and Systems Engineer Development Program, 1970 to 1971.

SELECTED EXPERIENCE

Planned and directed an Electronic Funds Transfer (EFT) proof-of-payment study for the Internal Revenue Service. This project team identified a number of suitable EFT methods and associated proof of payment alternatives, performed impact analysis from the IRS, tax payer and financial institutes points of view and developed recommendations for the methods to be implemented. In addition, the team developed a conceptual design for IRS's internal payment tracing system in an EFT tax payment environment.

Directed and participated in a technology and effectiveness review of the centralized Customer Accounts Systems (CAS) for a major money center bank. The review focused on the issues of the system ownership and control, its mission and its users, its support of the critical success factors, and its use of DBMS and 4GL technologies. The project team assisted the bank management in clarifying these issues, in developing consensus among its users on the mission and direction of the system, and in planning a course for its future development at the bank.

Participated in the consolidation of data processing activities for two large Wall Street brokerage firms (resulting from a merger agreement). The assignment included modifications to various systems and coordination of the conversion of a large number of data files in order to support the unified operation of the merged firms. This engagement was carried out under severe time constraints and involved participation by approximately one hundred systems engineers. The project was successfully completed on schedule.

Participated in various capacities in the analysis, design, programming, testing and implementation of several systems for a major beverage company. Other tasks included establishing documentation standards, training users, improving throughput and conducting post implementation reviews.

Directed a strategic information systems planning project for the Employee Retirement System of a large state. The plan calls for the use of open and relational systems technologies for the development of new systems.

Led a Price Waterhouse project team in reviewing the financial management systems plans and the underlying planning processes for six major U.S. government Executive agencies. This project focused on the plans' relationship to management goals for the organizations' compliance with OMB and Treasury directives, linkage with department wide IRM plans, and effective use of resources.

Directed two major custom system development projects for a state's Department of Law and Public Safety. The systems were developed and implemented using DBMS and 4GL technologies in an IBM mainframe environment. One of the systems had to be developed and implemented in a very short time frame to meet the program Implementation date specified by the legislature. It was successfully implemented on schedule.

Directed an independent validation and verification (IV&V) review of a sensitive application system for a Federal Government agency. This system, which now is in use at 2000-plus field sites, had to be reviewed and tested in a short span of time to satisfy the requirements of a new law. Following the review, the project team assisted the client staff in performing comprehensive system tests, correcting the errors and problems identified in the system before its release to the field.

Directed a Financial Management System (FMS) requirements definition and software vendor selection project to assist the management of a major federal department. In addition to the functional and technical requirements, the project team focused on GAO's Joint Financial Management Improvement Program (JFMIP) and GSA schedule requirements for the FMS systems.

Planned and directed a study of an unsuccessful major system development project for a large real estate management company. After identifying the primary causes of failure and the steps necessary to recover from the situation, the project team assisted the client in getting the project back on track and under control.

Assisted a large professional services firm in developing a conversion strategy for its financial and accounting systems. Next, the PW project team took the responsibility for the conversion of the first major accounting system and completed it successfully on time. These procedures were subsequently used by the client staff as a model for the conversion of other systems.

Planned and conducted a study to determine the feasibility of establishing an international (off-shore) software development center in India for a major US firm. The study focused on the technical, economical and political aspects of the venture.

Directed a review of the management and operation of a large computer center for a major insurance company. The scope of the review included the department's organization and administration practices, its computer equipment, software and personnel resources, telecommunications networks, data security and disaster recovery arrangements. The review identified a number of opportunities for overall effectiveness improvement, including some with significant cost savings potential.

Planned and led a project to develop short-term data processing effectiveness improvement recommendations and long-term data processing plans for a medium-size city government. The engagement identified several corrective actions required to improve the level of services provided to various city departments by the Bureau of Data Processing. The long range plans included: a systems upgrade plan, a computer equipment plan, a systems software plan, and a staffing and organization plan.

Planned, managed and actively participated in a data security review of the Treasury department of a U.S. Commonwealth government. In addition to a review of the overall security aspects of the department's EDP function, the engagement included an evaluation of the security risks associated with the Tax Collections and Lottery Systems, and development of security improvement recommendations.

Directed a team of consultants and client personnel in a major project encompassing requirements definition, RFP preparation, and hardware and software selection activities.

The client, a major non-profit religious organization, engaged Price Waterhouse to assist management in long-range planning and implementation of Unified Information Systems.

Directed and actively participated in reviews of accounting and financial systems and in related special projects for a major international airline. The systems reviewed included revenue accounting systems for passenger and cargo services and other accounting and reporting systems. Special projects included a review of a new minicomputer-based cargo accounting system in its planning and implementation stages with the objective of assisting the management in expediting its implementation, and in developing effective control procedures.

Directed and actively participated in a number of information systems controls, security and effectiveness reviews for clients in various industries.

Managed the requirement definition, analysis, and system design of financial systems for two major manufacturing companies while employed by a large facilities management firm. Coordinated these two parallel projects so as to minimize the duplication of development efforts.

OTHER

Professional Memberships

Member, National Association of Accountants

Member, Eta Kappa Nu (National Honor Society of Electrical Engineers)

Awards and Publications

Mr. Advani has spoken on a number of MIS issues to various professional groups. Topics of his recent speaking engagement include the following:

- Improving the Effectiveness of an MIS Organization
- Long-range MIS Planning
- Data Security
- EDP Contingency Planning
- Software Trends

RANGE OF EXPERIENCE

Program Evaluation, Quality Control and Quality Assurance, Large-scale Survey Research, Project Management, Database Design and Analysis, and Analysis of Benefit Program Implementation, Operation, and Impact.

EDUCATION

Graduate study in Sociology with emphasis on Evaluation Research Methods; University of Virginia; 1972 to 1974.

B.A. Sociology; University of Virginia; 1971.

EMPLOYMENT HISTORY

Price Waterhouse, Office of Government Services Washington, D.C. Manager 1990 to present.

Research and Evaluation Associates, Inc., Washington, D.C., Project Director, 1990

Applied Management Sciences, Inc., Silver Spring, Maryland. Division Manager, 1974-1989

SELECTED EXPERIENCE

Technical Manager of national assessment of the use of privately-owned food management companies to manage public and private school meal programs receiving USDA School Meal Program funding. Responsibilities include design of a survey and case study methodology to obtain and analyze data on management and service characteristics and comparative value relative to traditional service delivery systems. Study findings will be used by USDA as the basis for regulatory guidance.

Project Director.

Duties include providing technical and project management support for evaluation and information systems projects, and preparing policy analyses and reports. Specific project responsibilities included Project Director of a national study to develop profiles of State Food Stamp Program Operations and Project Director of a statistical modeling effort using Lotus and Quattro-Pro intended to provide the Head Start Program with national, state, and county level projections of enrollment, program coverage/overlap and cost.

Division Manager.

As a division director, responsible for technical and managerial functions applicable to program evaluations, quality assurance studies, large-scale data collection, and data systems development efforts. Responsible for technical management of 10 to 30 professional and research staff. Projects included:

Manager.

Vendor Management Study for the Supplemental Food Program for Women, Infant, and Children undertaken on behalf of the Food and Nutrition Service, USDA. Study examined the policies and practices of state administrative agencies to monitor vendor performance and control fraud and abuse. Responsible for developing research design (mail survey and in-depth case studies), instrumentation, and analysis. [1986-1989]

Senior Analyst.

Technical Assistance to State Food Stamp Agencies. Under a three year contract with the Food and Nutrition Service, provided technical assistance to State FSP quality control units in the development of strategies to reduce recipient fraud and abuse, and the development of strategies to make more effective use of QC investigations data and subsequent implementation of corrective action strategies. Lead author of a handbook on QC demonstration and evaluation targeted for State FSP administrators. [1985-1988]

Director.

Quality control evaluation and demonstration support effort for a Department of Labor to develop and test investigation and program design alternatives applicable to Unemployment Insurance Quality Assurance Programs. Study examined the feasibility of two significant changes in Unemployment Insurance benefit quality control -- modification of quality control investigation design to include denials, and testing of alternate investigation methods intended to reduce unit costs -- though the design and implementation and evaluation of multi-state pilot studies. Responsible for providing corporate oversight, analysis of outcome data, specification and evaluation of econometric model used to estimate effects of change in investigation scope on benefit cost to federal government, and authorship of final evaluation reports. [1985-1988]

Director.

Computer expert system and litigation data base development and support effort for determining the settlement value of personal injury claims against the Dalkon Shield Trust. Responsible for designing overall system, modeling causality used to structure the expert system -- involving the use of approximately 200 decision rules, and supervising implementation of a large-scale medical records data base and software (SAS) used to interface with valuation expert system. [1987-1989]

Designer and Director.

Computer Assisted Interviewing System. Responsible for developing specifications and acquiring PC-based CATI system. Directed multiple national and regional informational and market surveys employing a variety of complex probability sampling designs. [1986-1989]

Manager.

Litigation and analysis support to Office for Civil Rights in education-related compliance actions. Provided statistical and analytic support using SAS in a mainframe environment for Federal suit against a major urban school district to eliminate practices resulting in delayed placement of learning disabled school-age children. Based on analysis and testimony, client won case and imposed administrative sanctions. [1987-1988]

Manager.

Technical support providing expert quality control and statistical modeling assistance to the Internal Revenue Service. Responsible for developing a data-base model of Service Center 1040 program (individual) tax return processing and conducting analysis of data for 200,000 Tax Year 1983 personal returns to determine tax liability consequences of tax return processing errors. The model provided the basis for identifying processing overlap, gaps, and areas for quality improvement. The analysis identified significant potential tax revenue loss associated with processing error vulnerabilities. [1984-1987]

Manager.

National survey of child care providers and families with children in child care. Managed field work for approximately 200 site visits in 8 states. Also responsible for design, implementation and preliminary analysis of a CATI survey of a national sample of parents of children in day care centers and day care homes receiving FNS-administered child care feeding program funds. Results of the survey were used to inform Congress on targeting of program results. [1986-1987]

Manager

National probability survey to estimate and describe incidences of crime and violence arising out of prejudice. Responsible for sample design incorporating stratification, use of replicates to optimize target population -- minorities -- and random digit dial. Survey resulted in approximately 2,000 complete interviews. [1989]

Director.

National survey of food use by public school systems for the Food and Nutrition Service. National study to estimate the quantity and market value of purchased and donated food

commodities consumed annually by public school systems, and to describe food acquisition and management practices. Responsible for survey design, supervision of survey staff, data analysis and reporting. Sample design was based on results of Monte-Carlo simulation to estimate quality of estimates of various alternative designs. [1983-1986]

Deputy Director.

National evaluation and demonstration responding to Congressional mandate to upgrade the integrity of the school nutrition program application process. National study on behalf of FNS, implemented complex experimental design to test alternative error-reducing strategies for use in school-based meal programs. Responsible for study design, development of pilot test interventions, surveys of school districts and school building officials, and in-home income and program participation interviews with a sample of 3,000 low income families. The results of this demonstration were used to support significant changes in regulatory requirements. Final report was sent to Congressional oversight committee. [1981-1984]

Principal Investigator.

Designed evaluation of a Health Care Financing Administration-sponsored project to demonstrate the feasibility and cost benefits of health care cost-containment strategies. This study resulted in a patient tracking system. [1982-1983]

Director.

Evaluation of the impact and effectiveness of federal funding assistance to public libraries. Responsible for design, data collection, analysis, and reporting involving site visits to all 50 states and a probability survey of public libraries. [1978-1981]

Director.

Citizen Opinion Survey for Montgomery County, Maryland. Developed survey design, area probability sample and personal interview questionnaire for citizen opinion survey. [1979-1980]

Senior Analyst.

Validation of student- and parent-reported application information for the basic post secondary student financial aid program. Responsible for analyzing the results of a comparison of student aid application income data and corresponding information taken from IRS tax return data for a sample of 200,000 applicants. [1977-1978]

Director.

Evaluation of federally funded support of library cooperatives, networks, and demonstration projects. Responsible for designing, implementing, analyzing, and reporting the results of a national evaluation of the use of federal funds relative to Congressional intent. [1976-1978]

Analyst.

Evaluation of impact of training preceptorships on physician practice location decisions. [1976]

Principal Investigator.

Study to validate predictive ability of the Armed Services Vocational Aptitude Battery (ASVAB) in post-secondary schools. In this study, the ASVAB was administered in a sample of colleges and trade schools and academic performance was compared with test results. [1975-1976]

Analyst.

Study of characteristics and impact of automation and integration of 30 major social services information systems. [1976]

Principal Investigator.

Evaluation to determine why and how grant-funded demonstration project results targeting the health, social, and nutritional needs of older persons were utilized by administration agencies, planners, researchers, and service providers. [1974-1975]

OTHER

PAPERS

Casey, J. T., Atkinson, D., and Belle, R. (1988). Telephone Methodology Pilot Study. Silver Spring, Maryland.: Applied Management Sciences.

Casey, J. T., Belle, R. (1988). Denials Quality Control Pilot Study. Silver Spring, Maryland.: Applied Management Sciences.

Casey, J. T. and Edmondson, S. E. (1988) State Administrator's Quality Control Demonstration and Evaluation Handbook. Silver Spring, Maryland.: Applied Management Sciences.

Casey, J. T. and Chaney, B. (1985). School Food Purchase Study--Final Report. Silver Spring, Maryland.: Applied Management Sciences.

Casey, J. T. and Finnegan, D. (1984). Income Verification Pilot Project: Phase II Results of Quality Assurance Evaluation (1982-83 School Year). Silver Spring, Maryland.: Applied Management Sciences.

Casey, J. T. and Finnegan, D. (1984). Sampling and Data Collection Utilization Manual for Human Development Services. Silver Spring, Maryland.: Applied Management Sciences.

Casey, J. T., Linahan, R., and West, J. (1981). An Evaluation of Title I of the Library Services and Construction Act. Silver Spring, Maryland.: Applied Management Sciences.

Casey, J. T., Patrick, R., and Novalis, C. (1980). A Study of Library Cooperatives, Networks, and Demonstration Projects, Volumes I and II. New York.: K.G. Saur Inc. Publishers.

Casey, J. T. (1977). Des Moines/Poll County Integrated Services Program: A System Profile for the Evaluation of the Status and Effectiveness of State and Local Human Services Information Systems. Silver Spring, Maryland.: Applied Management Sciences.

Casey, J. T. (1977). Child Care and Placement Information System (CCPIS): A System Profile for the Evaluation of the Status and Effectiveness of State and Local Human Services Information Systems. Silver Spring, Maryland.: Applied Management Sciences.

Casey, J. T. (1975). An Evaluation of the Utilization of Title IV-By Research and Demonstration Findings. Silver Spring, Maryland.: Applied Management Sciences.

Casey, J. T. (1971). Major School of Enrollment and the Vocational Orientation of Undergraduate Students: A Study of Structural Effects. Proceedings of the Alpha Kappa Delta Annual Meeting. Richmond, Virginia.

PROFESSIONAL AFFILIATIONS

American Society for Quality Control

American Association for Public Opinion Research

COMPUTER SKILLS

Software:

SPSS and SPSS-PC+, SAS and PC-SAS, EXCEL, LOTUS 1-2-3, LEWP,

Multimate, WordPerfect, Microsoft Word, RBASE, DOS, SMARTCOM, Netware 286, WYLBUR, TSO, Computer Assisted Data Acquisition Systems, MacDraw, MacChart.

Hardware:

IBM 43xx and 30xx mainframe, Intel 8086, 8088, 80826 and 80386-microcomputers, Novell (Ethernet) and PC Net II Local Area Networks (LANs), WANG VS minicomputers, Apple Macintosh.

POSITION	Partner in Charge, Price Waterhouse Electronic Data Interchange (EDI) Consulting Group, Washington, D.C.
PROFILE	Directs the activities of a core group of consultants specializing in Electronic Data Interchange (EDI) and its implementation in industry and government. He is a member of the Board of Directors of TDCC - the Electronic Data Interchange Association (TDCC-EDIA) and has served on the United States Delegation to the international EDI standards development effort sponsored by the United Nations, known as EDIFACT. He has eighteen years of experience, primarily in the field of software and systems development and management of proposals and projects involving a wide variety of computer solutions, including EDI, financial systems and other applications.
EDUCATION	B.A., University of Illinois (with highest honors) M.S., University of Illinois, 1972 Certificate, Centar za Ucenje Stranih Jezik, Zagreb, Yugoslavia, 1969 Woodrow Wilson Fellow, 1970; Phi Beta Kappa, 1970; James Scholar, 1966-1970, Bronze Tablet
PROFESSIONAL HISTORY	Price Waterhouse: Partner, 1984 - present Senior Manager, 1980-1984; Manager, 1978-1980; Consultant, 1976-1978 Executive Office of the President, Office of Management and Budget, International Division: Budget Analyst, 1974-1976 State of Illinois, Executive Office of the Governor, Bureau of the Budget: Program Analyst, 1972-1974
TECHNICAL EXPERIENCE	Partner in Charge of a 12 month EDI feasibility study, cost benefit analysis, and prototype planning effort now underway at the Internal Revenue Service. Study will identify, document, and analyze opportunities to use EDI to file IRS forms; exchange information with banks, state and local governments, and other

**TECHNICAL
EXPERIENCE**
(continued)

entities; and other ways to use EDI technology to streamline operations.

Partner in Charge of EDI planning study at a major grocery products manufacturer serving the food industry. Conducted stakeholder analysis workshop with department head level managers. Deliverables included documentation of current EDI capabilities, opportunities to use EDI to support Quick Response in the future, and a software implementation plan.

Partner in Charge of an EDI strategic planning engagement for a Fortune 200 manufacturing company in the automotive industry. Objective of project was to develop a corporate EDI policy to coordinate EDI activities underway in several areas of the company (purchasing, distributor management, customer orders) and stimulate new EDI initiatives in additional key functional areas (finance, intercompany accounting, international transactions). In addition, study identified obstacles to the effective integration of EDI and processing improvements in such areas as Material Requirements Planning (MRP) and interfaces among internal systems. Project produced corporate policy document, cost benefit analysis, a five year implementation plan, and a video used to describe the company's EDI policies and plans.

Conducted EDI training for senior level executives at large automotive company.

Partner in Charge of an EDI strategic planning engagement for a Fortune 100 company in the health industry. Price Waterhouse and client personnel formed a joint study team to conduct fact finding with executive and operating level personnel, perform a cost benefit analysis, identify priorities for EDI implementation, prepare a general implementation plan, establish annual goals for the EDI program, and recommend an organization structure to coordinate the EDI effort on a company-wide basis.

Partner in Charge of a pilot project for a steel company involving development of a strategic EDI issues document, enhancement of the TranSlate EDI software package to handle the materials test data transaction set (863) and mapping between the test report application and TranSlate.

**TECHNICAL
EXPERIENCE**
(continued)

Quality assurance partner on a project for Texaco to develop application software and an EDI capability related to leasing of data processing equipment. Application functionality includes handling internal base requests, tracking leases from initiation through all phases of the life cycle, and sending and receiving EDI transaction sets to and from lessors of equipment. Application was developed in a DB2 environment and involved cooperative processing with PC's on a local area network. EDI capability includes limited use translation package built around software available from Release Management Systems (RMS).

Conducted an EDI strategic planning seminar for Shell Oil Company.

Partner in Charge of project for DuPont to evaluate, select, and implement mainframe EDI software available from Metro Mark.

Partner in Charge of EDI cost benefit analysis conducted for clients in automotive, healthcare, and aerospace industries.

Partner in Charge of an engagement to review an EDI translation software package to determine the adequacy of internal controls.

Partner in Charge of an engagement to review technical specifications for various aspects of an EDI service to be offered by an international value added network.

Partner in Charge of a project to develop an electronic update capability for an EDIFACT database to be maintained at the United Nations ECE Secretariat in Geneva.

Partner in Charge of a study to determine the feasibility of an EDI networking solution for the automation needs of companies doing business along the St. Lawrence Seaway System. Project included formulation of an EDI system concept, presentation to the potential users in a series of seminars, and a survey of attitudes towards the proposed alternatives.

Partner in Charge of an EDI Demonstration project for the Port of Houston. Purpose of the project is to demonstrate the viability of an EDI system to exchange manifest and other data in standard formats between the port and selected ocean carriers or their

**TECHNICAL
EXPERIENCE**
(continued)

agents. Project involves the selection of EDI PC translation software and a PC, development of mapping software, and successful testing of the messaging capability and a PC/Mainframe upload/download.

Consultant on a project for a major telecommunications company to develop a conceptual system design for an international trade facilitation service. The system was designed to facilitate the preparation and transmittal of trade-related documents between shippers, carriers, freight forwarders, and customs house brokers, utilizing EDI standards.

Director of a project for the National Computer Board in Singapore to study the overall computerization needs of the Singapore trading community. The engagement included an in-depth review of the computerization needs of four sectors in the trading community: freight forwarders, shipping agents, air cargo agents and traders. The project results included a survey/computer needs assessment, a port-related software directory (U.S. and U.K. products), functional requirements for an integrated system, and opportunities for improvement with automation.

Presented a series of seminars to air cargo carriers, steamship lines, brokers, terminal operators, warehouse operators, port authority staff, and others in Boston on the subject of Community Cargo Release Systems (CCRS).

Partner in Charge of requirements definition and design phase of a turnkey Community Cargo Release System (CCRS) for the Jacksonville Port Authority, Jacksonville, Florida. System functions include cargo tracking and location, ACS interface, vessel arrivals and departures, consolidated billing, security, general ledger, accounts payable, equipment maintenance, work orders, inventory and purchasing, planning and budgeting, payroll, personnel, financial reporting, property management, investment management, electronic mail and calendar, and word processing. The system was installed on an IBM System/38 purchased for this purpose.

Partner in Charge and project manager on a project sponsored by the U.S. Maritime Administration (MARAD) and directed by the Golden Gate Ports Association (GGPA) to design a computer

**TECHNICAL
EXPERIENCE**
(continued)

system to serve the needs of the trading community operating at the six GGPA member ports in northern California. The six GGPA member ports are Oakland, San Francisco, Redwood City, Sacramento, Richmond, and Stockton, California. The information needs of the trading community, including customhouse brokers/freight forwarders, shipping agents, intermodal carriers, the port authorities, and U.S. government agencies were addressed. The result of the study was a trading industry model design, as well as specific recommendations for the GGPA system solution.

Partner in Charge of an internal programmer/ analyst training programs conducted by Price Waterhouse. Supervised the recruiting of 26 outstanding candidates, selection of the facility, development of the curriculum, and management and presentation of the training itself. The training program is 14 weeks long and produces new programmers proficient in JCL, "C", and COBOL language.

**RECENT
SPEECHES**

"Nurturing an EDI Program", EDI '90, Data Interchange Standards Association Annual Conference, Las Vegas, Nevada, April 11, 1990

"EDI and Financial Management", Financial Managers Association, Nashville, Tennessee, April 5, 1990

"The Connection Between EDI, Competitive Advantage, Quality, Service, and Cost Reduction", Presentation to Texaco EDI Interest Group, Houston, Texas, March 28, 1990

"EDI: Competitive Necessity or Strategic Advantage?", Digital Consulting Conference, Phoenix, Arizona, February 14-15, 1990

"EDI Strategic Planning Seminar", Presentation to Shell Oil Company Task Force, Houston, Texas, March 5, 1990

"EDI and Security", Presentation to Union Comp Executives, Charlotte, North Carolina, February 7, 1990

"EDI and Improved Information Flow in the Corporation", TDCC Electronic Data Interchange Association, Annual Conference, Washington, D.C., December 13, 1989

**RECENT
SPEECHES**
(continued)

"EDI Overview" and "EDI Standards Development", National Association of Customhouse Brokers and Freight Forwarders, Annual Meeting, Washington, D.C.

"EDI Overview" and "EDI Standards Development", National Association of Customhouse Brokers and Freight Forwarders, EDI Seminar, Seattle, Washington, December 6, 1989

"EDI Overview" and "EDI Standards Development", National Association of Customhouse Brokers and Freight Forwarders, EDI Seminar, Los Angeles, California, December 5, 1989

"EDI Overview", Wholesale Florists and Florist Suppliers of America, Computer Seminar, Washington, D.C., October 29, 1989

"EDI and Quality, Delivery, and Cost Control", Executive Update, Jefferson Smurfit Corporation, St. Louis, Missouri, October 11, 1989

"Strategic Planning for EDI: Case Study", UCLA Information Systems Associates Fall Meeting, Los Angeles, California, September 28, 1989

"EDI Overview, Senior Management Roles, and Integration Issues", Digital Equipment Corporation EDI Product Information Disclosure, Baltimore, Maryland, September 27, 1989

"EDI and the Audit", Auto Tech '89, Automotive Industry Action Group, Detroit, Michigan, September 21, 1989

"Strategic Planning for EDI: Case Study EDI: The Next Generation", INPUT Conference, San Francisco, July 19, 1989

"EDI Overview" and "EDI Standards Development", National Association of Customhouse Brokers and Freight Forwarders, EDI Seminar for Board of Directors, Washington, D.C., June 22 - 23, 1989

"Integration of EDI into the Healthcare Industry", Health Industry Business Communications Council (HIBCC), Philadelphia, June 21, 1989

**RECENT
SPEECHES**
(continued)

"Port Automation Panel Chairman", NCITD -- The International Trade Facilitation Council, International Trade and Computerization Conference, Panel Chairman, Washington, D.C., June 13, 1989

"EDI and the Audit", EDI: The Strategic Management Imperative, Frost and Sullivan Conference, Washington, D.C., June 9, 1989

"EDI and Security", Information Systems Security Association, Chapter Meeting, Washington, D.C., May 31, 1989

"EDI at Cummins Engine: Case Study", Corporate EFT/EDI Conference, EDI Research Inc., Chicago, Illinois, May 10-11, 1989

"EDI Overview and Audit Issues", 19th Symposium on Audit Practices in DP, Ft. Lauderdale, Florida, May 4, 1989

"EDI and the Audit", EDI '89, Data Interchange Standards Association Conference, New Orleans, Louisiana, April 12, 1989

"EDI and EDP Audit Questions", Truck Action Group, Finance Committee Meeting, Salt Lake City, Utah, January 10, 1989

"EDI and the Audit", TDCC - Electronic Data Interchange Association Annual Conference, Washington, D.C., December 1988

"The Future of EDI", Principles of EDI, EDI Education, San Francisco, California, December 8, 1988

"Role of Port Authorities in EDI", American Association of Port Authorities Governing Board Members Seminar, West Palm Beach, Florida, January 28, 1987; Ports and U.S. Customs Conference, June 1987; Annual Conference, Galveston, Texas, October 1987

TOPICS

Introduction to EDI
Strategic Planning for EDI
EDI and Competitive Advantage
EDI and Quality, Delivery, and Cost Control
Cost Benefit Analysis of EDI
Case Studies in EDI
Integration of EDI into Business Strategies and Applications

TOPICS

(continued)

EDI and Audit, Security, and Legal Issues
Developments in EDIFACT
Future Developments in EDI
Ports, EDI, and U.S. Customs Automation Initiatives
Community Cargo Release Systems
Software Selection

PUBLICATIONS

"The Right EDI Software Will Drive Up Profits", EBN Purchasing Issues, February 4, 1991

"Computers for Seaport Trade Communities", Export Today, October 1990

"The Compelling Case for EDI", Financial Manager, January/February 1990

"Mastering EDI", Performance, Fall 1989

"Tax Reform and Ports," appeared in Brandon's Shipper and Forwarder, September 29, 1986

**PROFESSIONAL
CERTIFICATIONS
AND ACTIVITIES**

Certified Systems Professional (CSP)

Certified Management Consultant (CMC)

Consultant, EDI Monthly Report

Consulting Editor, EDI Forum, the Journal of Electronic Data Interchange

Member, Certified Electronic Trade Professionals Association

RANGE OF EXPERIENCE

Dr. DeLuca is a firm expert in survey research design and analysis. He has conducted research on attitudinal and behavioral issues on a wide variety of substantive topics and has taught both graduate and undergraduate courses in survey research design and analysis.

EDUCATION

Ph.D., Sociology of Development, Cornell University

M.A., Sociology, West Virginia University

B.A., Sociology, Fairmont State College

Dr. DeLuca is the co-author of two books, and he has authored numerous journal articles and book chapters as well. He is an active member of both the American Association for Public Opinion Research (AAPOR) and the World Association for Public Opinion Research (WAPOR), and has served on the Executive Councils of each. He is also an active member of the American Sociological Association. He has presented papers at the annual conferences of each of these professional organizations.

EMPLOYMENT HISTORY

Price Waterhouse, Washington, D.C.: Senior Manager, 1990 to present.

The Gallup Organization, Princeton, New Jersey: Vice President and Director of Government and Education Research Services, 1989 to 1990; Senior Study Director, Communications and Policy Research Group, 1986 to 1989.

Yale University, New Haven, CT: Director of the Roper Public Opinion Research Center, Office for Teaching and Research and Associate Research Scientist, Yale Institution for Social and Policy Studies, 1976 to 1986.

SELECTED EXPERIENCE

Internal Revenue Service - Opinion Survey of Taxpayers Contacted by IRS Collection

Currently managing a telephone survey of 7,500 taxpayers contacted by IRS Collection Function. For non-respondents in the telephone survey, questionnaires will be mailed to convert them to respondents. Results of the survey will be used to determine taxpayer perceptions about the quality of service provided by Collection, to obtain suggestions

from taxpayers, and to measure the effects of IRS quality initiatives.

Small Business Administration: Program Evaluation Survey

Currently serving as survey director on an evaluation of the Small Business Administration 7(a) guaranteed business loan program. Project design involved developing an evaluation design, survey instruments to screen and interview small business owners, a sample design, and an OMB clearance package. A total of 2,000 small business owners will be interviewed using Computer Assisted Telephone Interviewing (CATI). Of these, half will be program participants and half will be similar businesses that did not participate in the program. Data on opinion of the program, ability to obtain commercial financing, and business success/failure and growth will be collected.

Food and Nutrition Survey.

Director of CATI telephone interviewing for an evaluation of the Food and Nutrition Service's Women, Infants and Children (WIC) Farmers' Market Coupon Demonstration Program. Under this program, nutritionally at risk women and children are provided coupons redeemable for fresh fruits and vegetables sold at participating Farmers' Markets. The study assesses the nutritional benefits and dietary changes of women and children participating in the program, as well as the financial benefits of the program for farmers. Findings are based on a survey of a random sample of 2,640 WIC participants and 400 farmers.

Evaluation of the Taxpayers Assistance Program for the Internal Revenue Service.

Conducted a national survey of 7,000 taxpayers who use the IRS Taxpayer Assistance Program to evaluate the quality of services provided. Project included designing and implementing sampling procedures, survey instruments, and procedures for data collection and follow-up of non-respondents. Based on survey results, recommended actions to improve service quality.

Integrated Quality Control Measurement Project of Student Financial Aid for the U.S. Department of Education.

Conducted a study for the U.S. Department of Education to evaluate the quality of Title IV financial aid delivery systems. These delivery systems, which include the Pell, Campus-Based, and Stafford Loan programs, will distribute \$18.3 billion of financial aid to postsecondary studies in the 1988 - 1989 academic year. The study involved: designing a nationally representative sample of approximately 350 institution and 3,500 studies; determining the variables and data (including demographic data) to be collected and analyzed; collecting the data from the institution, students, parents, Internal Revenue Service, and other sources; analyzing errors in financial awards to sampled students; projecting sample data to estimate national totals for error; and designing approaches to

improving the financial aid delivery system.

Survey of College Seniors' Knowledge of the History and Literature of American and Western Civilization for the National Endowment for the Humanities.

Managed a nationwide survey of graduating college seniors commissioned by the National Endowment for the Humanities and conducted by the Gallup Organization. The survey was designed to get accurate and timely information about senior undergraduates' knowledge of significant events, dates, and historical figures in the history of America and of the Western civilization, and their knowledge of major authors and work in Western and American literature. It was decided that the best way to meet the goal of producing nationally projectable test score parameters on knowledge of history and literature was to conduct the project in two phases. The first phase involved project planning, questionnaire design, pre-test, and sample frame development. Because it was determined that the sample frame met with the goals of the study, phase two was initiated. The second phase involved data collection, data processing, analysis, and reporting. Six hundred and ninety-six personal interviews were conducted among a representative random sample of college seniors currently attending four-year American colleges and universities.

1990 Census Awareness Evaluation for the U.S. Bureau of the Census.

Managed a "Census Awareness Evaluation" of the Census Bureau's publicity campaign for the "1988 Dress Rehearsal". The study was designed to track Census awareness, knowledge, attitudes, and behavior in conjunction with the advertising campaign implemented by the Advertising Council at two dress rehearsal sites--the 1988 Census of St. Louis City and the 1988 Census of East Central Missouri. In addition, a qualitative study was undertaken in order to assess directly the specific advertisements used in the publicity campaign. The objectives for these evaluation projects were:

- To measure changes in Census awareness, knowledge and attitudes over the course of the ad campaign;
- To assess the consistency of change among key demographic subgroups--specifically non-black vs. blacks, low SES blacks vs. high SES black, and urban vs. rural residents;
- To determine the degree to which accurate knowledge and positive attitudes about the Census are related to cooperation in returning the Census form;
- To evaluate the extent of exposure to Census advertising and its impact.

Survey on Higher Education Among Young People 13 to 21 Years Old.

Conducted a "Survey on Higher Education" among young people 13 to 21 years of age

for the Council for Advancement and Support of Education (CASE). The study was designed to measure the level of information, knowledge, attitudes, and perceptions about colleges and universities held by teenagers and young adults. The study also explores factors related to decisions about participation in higher education among those already graduated from high school, as well as anticipated future participation among teenagers still in secondary schools. More specifically, a nationally representative sample of young people were questioned on the following topics:

- Plans, expectations, and decision about higher education
- Personal and environmental factors related to plans and decisions for getting a college education
- Attitudes and perceptions about college participation, and the reasons for going or not going to college
- Attitudes and perceptions about types of colleges
- Personal preferences for types of colleges: two-year versus four-year; public versus private; located in-state versus out-of-state; and full-time versus part-time attendance
- Information, knowledge, and perceptions about college costs and financial aid

The Roots of Success: A Survey of Successful People and their Parents.

Conducted a survey for Family Circle magazine on people who are highly successful in their professional careers, and how they were raised. Mothers and fathers of successful people were questioned about their family life during the period of raising their child. More specifically, parents were asked about:

- Family organization, interactions, and activities
- Child's interests, activities, talents, and skills
- Perceptions of child's personal qualities and characteristics
- Current relationship and contact with child
- Family socio-economic and demographic description. This study was conducted in three stages. In the first stage, telephone interviews were conducted with people who have achieved professional success in business, politics, news, sports, entertainment, science, medicine, the arts, and humanities. In the second stage, parents of the high achievers were sent

self-administered questionnaires by mail. In the third stage, a sample of parents was randomly selected from the general population as a control group. The sample of comparison parents was balanced against the demographic profile of the high achievers' parents on three factors--age of child, region of the country, and education.

Attitudes Toward U.S.-European Relations.

Conducted a survey of attitudes toward U.S.-European Relations for the Delegation of the Commission of the European Communities. The study was designed to measure American public opinion about Western Europe, the European Communities, and the political, economic, social, and cultural factors that shape U.S.-Western European relations. More specifically, adults from the general population, and a specially selected elite group of national opinion leaders were questioned on the following topics:

- U.S. relations with Western Europe
- Importance of Western Europe
- Political unification of Western Europe
- International trade relations, and solutions to the American trade deficit
- Differences between American and Western European society on social, economic, and cultural characteristics
- Knowledge of and attitudes toward the European Communities
- Interest in following what's happening in foreign countries, international relations, politics, and public affairs
- Personal experiences, or other connections with Western Europe (e.g., visited, business dealings, ancestry)

The findings on American public opinion about Western Europe are based on telephone interviews with a national sample of adults from the general population, and an elite sample of national opinion leaders.

Yale Roper Center.

As Director of the Yale Roper Center, Dr. DeLuca was responsible for all aspects of the design and implementation of the surveys conducted there. Studies for which he was responsible while at Yale University include the public perception of technical risks and benefits; incentives and opportunities for industrial research and development; private-non-profit foundation formation, growth, and decline; and the behavior of stock market

investors.

City of New York:

Served as Project Director on a customer satisfaction survey of approximately 400,000 cable TV subscribers in Manhattan, NY. This study was conducted to evaluate the cable television service provided to subscribers in the areas of reception, telephone service, service calls, and billing. Results were presented both overall and by census tract segments of the city.

OTHER

PUBLICATIONS

"Perceptions of Technological Risks and Benefits" (with Leroy C. Gould, et. al.) New York: Russell Sage Foundation, 1988.

"Measuring the Social Impact of Natural Resource Policies" (with William R. Burch). Albuquerque, New Mexico: University of New Mexico Press, 1984.

"Survey Research on Energy-Related Issues". Chapter 19 in *The Future of Electrical Energy: A Regional Perspective of an Industry at a Crossroads*, Sidney Saltzman and Richard E. Schuler, eds. New York: Praeger, 1986.

"Public Perceptions of Technological Risks: A Methodological Study" (with Wendy Horowitz and Jan A.J. Stolwijk). In *Contemporary Issues in Risk Analysis*, Vincent T. Covello, Jeryl Mumpower and Joshua Menkes, eds. New York: Plenum, 1986.

"Public Perception of Technological Risk" (with Jan A.J. Stolwijk, et al.). Pp 166-185 in *Safety Evaluation and Regulation of Chemicals 2*, F. Homburger, ed. Basel, Switzerland: S. Karger AG, 1985.

"Safety of Automobile Travel" (with Jan A.J. Stolwijk and Wendy Horowitz). SAE Technical Paper Series, Number 840873. Warrendale, PA: Society of Automotive Engineers. May 1984.

"Theater Nuclear Forces: The European Public Context" (with Bruce Russett). *Political Science Quarterly*, Vol. 98 No. 2 (Summer, 1983): 179-196.

"Risk and Benefit Perceptions, Acceptability Judgments, and Self-Reported Actions Toward Nuclear Power" (with Gerald T. Gardner et al.). *The Journal of Social Psychology*, No 116 (February, 1982): 179-197.

"Don't Tread on Me: Public Opinion and Foreign Policy in the Eighties" (with Bruce M.

Russett). Political Science Quarterly, Vol. 96, No. 3 (Fall, 1981): 381-399.

"Archival Data Resources and Analysis Services of the Roper Center", The Journal of Conflict Resolution, (September, 1978): 535-544.

"Attitudes, Behavior, Lifestyle and Energy", Social Science Energy Review, New Haven, CT: ISPS, Yale University, (Summer, 1978) Vol.1, No. 3: 27-60.

PROFESSIONAL ORGANIZATIONS

Executive Secretary and Administrator of Secretariat, World Association for Public Opinion Research (WAPOR), 1979-86.

Council Member, American Association for Public Opinion Research (AAPOR), Chair Publications Committee, 1984-86.

Member, Board of Directors, The Roper Center, Inc. (Secretary 1979-85).

Delegate, UNESCO Issue Group on Peace Committee, Paris 1984.

Consultant, New York Power Authority, 1984.

Consultant, U.S. Committee on Energy Awareness, 1984. (with Dr. Herbert Krugman, Herb Krugman Associates).

Member, American Sociological Association.

Editor, Environment Sociology Newsletter, the official newsletter of the ASA Section on Environment Sociology, 1977-79, Member of Section Council 1982-85.

Member, Rural Sociological Society.

Member, International Association for Social Science Information Service and Technology (IASSIST).

Range of experience

Expert in the areas of statistical sampling, analysis and modeling.

Education

B.S. cum laude with honors, Mathematics, University of Maryland
M.S., Statistics, Stanford University
Ph.D., Statistics, Stanford University

Professional and business history

Price Waterhouse, Senior Manager, 1987 to present; Manager, 1984 to 1987;
Senior Consultant, 1981; Staff Consultant, 1980.

Applied Management Sciences, Staff Associate, 1982 to 1984.

Stanford University, Research Assistant for the Department of Statistics, 1978 to 1980, 1981 to 1982.

Patuxant Wildlife Research Center, Statistical Clerk, 1977 to 1978.

Relevant professional and business experience

Sample Design, Survey Administration and Analysis

Directing a survey to estimate motorboat fuel use by recreational boaters for the U.S. Fish and Wildlife Service. The purpose of this survey is to determine the proportion of approximately \$14.5 billion in Federal fuel excise taxes collected each year that should be deposited in the Aquatics Resources Trust Fund. Findings are based on national telephone and mail surveys of boaters.

Directed a study for the Veterans Administration to evaluate quality control procedures used by the Department of Veterans Benefits to monitor non-medical benefits disbursements totalling \$16 billion annually. Reviewed sample design, sample selection, and estimation procedures; measurement accuracy; potential biases; and other features of the quality control program and recommended approaches to improving the program.

Relevant professional and business experience (continued)

Directed studies for the Energy Information Administration of the Department of Energy to evaluate and enhance the quality of published estimates of petroleum product resources, production and sales. Analyzed EIA surveys to evaluate: quality control procedures; survey frames; sampling procedures; estimation procedures; and imputation procedures. Projects also included the development of data editing procedures, projection techniques, and data continuity analysis.

Directed a sample survey to study the effects of the IRS's Automated Examination System (AES). Under AES, approximately 15,000 Revenue Agents and Group Managers in the Examination Division were provided laptop computers, software, and training. The survey collected data on the effects of AES on the organization and individuals within the organization to provide both feedback on the current phase of automation and a longitudinal database for studying future phases of AES.

Directed a data collection and analysis effort to evaluate the costs and benefits of a one-quarter billion dollar automated medical administration and outpatient pharmacy system for all Veterans Administration medical centers. The project involved mail and in-person surveys to estimate productivity improvements, evaluate employee attitudes, and identify benefits and problems associated with the ADP system. Briefed the Senate Veterans Affairs Committee on the results of cost-benefit study.

Other sample survey design and analysis experience includes:

- o Analyzing sample survey data to resolve a multi-million dollar dispute between the U.S. government and the University of Chicago relating to energy costs for government-sponsored research.
- o Evaluating sample survey data to estimate oil and gas reserves in the Arctic for the National Petroleum Council.
- o Evaluating survey data to profile energy conservation efforts on a national level for the State's Energy Conservation Program.

Statistical and Econometric Modeling

Directed the development of a resource planning model for the United States

Relevant professional and business experience (continued)

Navy. The model, developed using regression analysis, is used by the Navy to plan and support its one billion dollar maintenance and repair budget for shore base facilities.

Study included the evaluation of data quality, model development, model evaluation, and model implementation.

Directed data collection, data analysis, and system implementation for a comprehensive resource planning model for the IRS Collection function. The objective of the resource planning model was to provide a mechanism for efficiently allocating resources and substantiating projected revenues and costs for the Collection function submitted in budget proposals.

Developed and evaluated time series models used for short-term projections of energy supply and production for the Department of Energy.

Honors

Stanford University Fellowship. 1978-1980, 1981-1982.

Milton Abromowitz Prize. Given to a junior or senior mathematics major "who has demonstrated superior competence and promise for future development in the field of mathematics and its applications." University of Maryland, 1978.

State of Maryland Senatorial Scholarship. 1975-1978.

Honor Scholarship in Mathematics. University of Maryland, 1974.

Publications

A Simple Approximate Variance Estimate for a Complex Unequal Probability Sample Survey" (Co-author). Presented at the 147th Annual Meeting of the American Statistical Association, August 1987.

"Redesign of the IRS Corporate SOI Sample" (coauthor). Presented at the 144th Annual Meeting of the American Statistical Association, August 1984.

"Evaluating Sample Designs for Load Research" (coauthor). Presented at the

Eleventh Energy Technology Conference and Exposition, March 1984.

"Advances in Quality Control in Petroleum Supply Division Data" (coauthor).
Presented at the Petroleum Supply Division Symposium, August 1983.

"Robust Estimation of Extreme Quantiles." Stanford University, Department of
Statistics, Technical Report No. 60 and Doctoral Thesis, August 1982.

"Estimation of the Return Period for Gumbel Processes with Applications to Air
Quality Measures." Stanford University, Department of Statistics, Technical
Report No. 36, March 1980.

CLIFFORD T. KERNOHAN

Audit Partner

RANGE OF EXPERIENCE

Responsibilities have included providing service to clients in various industries including petroleum, high technology and other manufacturing, food service/restaurants, food processing, retail, resorts and hotels and cable television. Significant experience with unique accounting, auditing, reporting and business issues, both domestic and foreign; acquisitions, dispositions and mergers; complex costing systems and LIFO inventories; public stock and debt offerings; arbitration proceedings as both advocate and arbitrator; and issuing special reports under provisions of contractual agreements.

The majority of his career has been in serving large, publicly-held and/or international companies. Served as engagement partner for Chevron's acquisition of Gulf Corporation and the subsequent world-wide coordination of merging of operations.

Assigned to Leeds, England, office for six months in 1977 as participant in the firm's Manager International Development Program.

SPECIFIC RELEVANT EXPERIENCE

Saga Corporation - responsible for services to this food service/restaurant company, 1979 through 1987. Saga was acquired in 1986 by Marriott Corporation, at which time it operated approximately 1,300 separate food service and restaurant units, a significant portion of which were education food service units.

Other relevant experience includes responsibility for smaller food service and restaurant clients and acquisition investigations of food service and restaurant companies.

PROFESSIONAL AND BUSINESS HISTORY

Price Waterhouse - San Francisco 1984 to present; San Jose 1981 to 1984; San Francisco 1972 to 1981.

PROFESSIONAL AND BUSINESS AFFILIATIONS

American Institute of Certified Public Accountants

Mill Valley Film Festival, Treasurer and member of Board of Directors

San Francisco Chamber of Commerce

World Affairs Council of Northern California

EDUCATION

California State University, Chico; B.S., Business Administration and Accounting

RANGE OF EXPERIENCE

His experience is in the areas of policy evaluation and implementation assessment, human services, economic analysis, financial feasibility studies, and strategic planning.

EDUCATION

Ph.D, M.A., Economics, University of Colorado

B.A., History, Williams College

EMPLOYMENT HISTORY

Price Waterhouse: Partner, 1986 to date; Senior Manager, 1981 to 1986; Manager, 1981.

U.S. Department of Energy: 1980 to 1981, Director, Office of Economic Analysis, Policy and Evaluation.

Congress of the United States, Congressional Budget Office: 1979 to 1980, Principal Analyst, National Resources and Commerce Division; 1975 to 1979, Principal Analyst, Human Resources and Community Development Division.

Middlebury College: 1974 to 1975, Assistant Professor, Department of Economics.

Colorado State Legislative Council: 1972 to 1973, Research Associate, Colorado Tax Profile Study.

University of Colorado: 1970 to 1972, Research Assistant, Institute of Behavioral Science; 1971, Research Assistant, National Institute of Education Planning Project; 1969 to 1970, Research Assistant, Bureau of Economic Research.

SELECTED EXPERIENCE

PROGRAM EVALUATION

Program Evaluation of Food Service Management Companies in the School Nutrition Program.

Project Partner on a current engagement to conduct a national study to evaluate the effectiveness of contract service providers in school nutrition programs. The 3 year study includes survey, contract reviews, and on-site visits to determine the quality of services

and food, and recommend improvements in federal guidelines to assist state programs.

HEALTH AND HUMAN SERVICES

Comprehensive Study of Children and Family Services for the State of Oklahoma.

Project Partner on a six-month study of children and family services for the HJR 1021 Task Force on Children and Families, a 53-member legislatively-established task force. The project team examined services in the areas of mental health, public health, juvenile justice, child welfare, income support, and special needs children; developed indicators of the health and well-being of children and families; described the current services system in terms of providers, client services, and client data; identified model or innovative programs in other states which may be applicable to Oklahoma; developed findings on the strengths and weaknesses of the current services systems; and made recommendations for improvements in the organization, programs, financing, and coordination of services for children and families. The project involved extensive interviews with state, local and private sector providers workshops with public and private sector providers, and extensive data collection and analysis.

Cost Analysis of Welfare Programs and Reform Options.

Welfare analysis included review of current welfare programs, their impacts on the low-income population, and the cost and distributional impacts of welfare reform proposals. Utilizing a microdata base of the U.S. population, Dr. Korbel prepared an analysis of the impact of current cash and in-kind welfare programs on the poverty status of families. He then prepared two major studies of welfare reform options. In the first study, options ranging from incremental changes to comprehensive restructuring were developed and the costs and distributional impacts of various proposals were analyzed. In the second welfare study, Dr. Korbel analyzed the Carter Administration comprehensive welfare reform proposal and detailed costs and distributional impacts and related issues (i.e., impacts on employment and administrative burden).

Cost Analysis of Social Security Disability Insurance Program.

Analysis focused on the disability insurance program and reform options to control future costs. Dr. Korbel prepared a number of papers in this area ranging from background information to analyses of costs and benefits of reform proposals. He utilized a detailed microdata file consisting of a representative sample of the U.S. population to analyze the distributional characteristics of the disabled including income, employment status, and region of residence.

Evaluation of Private and Public Social Service Programs for the Department of Health and Human Services (HHS).

Project Director on an engagement for HHS to evaluate social service programs funded by public funds, private funds or a combination of funding sources. Comparisons were also made between programs delivered by non-profit and for-profit providers. Programs were evaluated in terms of the types and range of services provided, costs and effectiveness of service, management and operation of programs, and nature of clients served. The study team developed an Inventory of providers offering Alcohol Prevention and Treatment Services, Residential Care for Children and Youth, and In-home Support Services in Boston, Denver and Memphis and then conducted a detailed cost-benefit analysis of selected providers of the three services with conclusions drawn as to the efficiency of service delivery, nature of the client population served, and nature of the service providers.

ECONOMETRICS/STATISTICAL ANALYSIS

Study of Actuarial Soundness of FHA GI Fund

Currently involved as Project Partner in a study of the actuarial soundness of the Federal Housing Administration's General Insurance Fund (GI Fund). This study will focus on examining the policies and underwriting principals of both the multi-family and single-family programs that comprise the GI Fund. Specific tasks of this project include:

- Developing econometric models of loan failure to estimate expected future HUD assistance, subsidies, or claim settlement.
- Conducting cash flow analysis of the future cost of individual multi-family programs.
- Reviewing existing and developing new underwriting and credit screening methodologies that HUD can employ in the loan review process.
- Developing recommendations to provide additional sources of cost savings on an individual program basis.

Survey Database and Microsimulation Evaluation of Welfare Programs.

Welfare analysis was based on macroeconomic analysis and the application of "state of the art" microsimulation techniques. Quantitative work included microsimulation of current programs and options, economic and demographic adjustments of Census Current Population Survey data bases, and the application of econometric techniques to program data and other microdata bases.

STRATEGIC PLANNING AND POLICY ANALYSIS

Basic Ordering Agreement to Provide Management Analysis to NASA

Project Partner on this BOA to provide technical assistance to NASA. Project Tasks include:

- Analysis of NASA's position in the communications satellite market and need of NASA to strategically position itself in this market
- Analysis of NASA's research and development facilities and of the evaluation criteria used to rank these facilities.

Data Collection and Inventory for National Institute of Education (NIE).

For the National Institute of Education, Dr. Korbelt was part of a research team that surveyed the literature on the economics of education with particular attention to the problems of obtaining and allocating educational resources.

Department of Commerce, National Oceanographic and Atmospheric Administration NOAA.

Project Partner on a feasibility study of NOAA-EUMETSTAT Joint Ventures. The project will determine what management model NOAA should select for its polar orbiting weather satellite program commencing around the year 2,000. This project is a task order under a Basic Ordering Agreement. Areas of focus include:

- Assessing the impact of relevant Policy, Technical, and Business Issues; Financing Options; and, Industrial Reactions on different model configurations
- Evaluating the Legal, Regulatory, and Technological Barriers and Risks different models would produce
- Recommending a Management Model appropriate for a NOAA joint venture.

Strategic Plan for the State of Oklahoma.

Project Partner on a recent engagement to develop a five-year travel and tourism plan for the State of Oklahoma. The plan includes a policy statement for the State Government in tourism, program strategies, goals and objectives, organizational responsibilities for coordinating the activities of public and private sector tourism organizations, financing, staffing, timeframes, an outcome assessment, and legislative requirements.

Strategic Development Plan for the Chickasaw Nation.

Project Partner on a current engagement to develop a long-range travel and tourism development plan for the Chickasaw Nation and to conduct a preliminary feasibility study for a proposed theme park/cultural center. The project includes reviewing tourism resources; developing marketing and product development strategies; developing an implementation plan that defines responsibilities, resources and timeframes; examining the specifications and scope of the theme park/cultural center; identifying the experience potential demand for the revenues from the center; examining (continued) infrastructure requirements; and assessing the financial feasibility of the center.

Strategic Plan for the State of Iowa.

Project Director for the development of a comprehensive five-year economic development and trade promotion strategy for the State of Iowa. The Plan included goals and objectives, programs, responsibilities, activities, and organizational implementation issues.

Strategic Plan for the State of South Carolina.

Project Partner on an engagement to assist the South Carolina Coordinating Council for Economic Development in defining goals and developing and implementing strategy based on the state's strengths and weaknesses. The engagement also involved designing implementation plans for the development strategy including programs, requirements organizational roles, schedules, and resource requirements.

Strategic Plan for the State of New York.

Project Partner on an engagement to develop a five-year travel and tourism master plan for the State of New York. Responsibilities, included goals and objectives, organizational programs, financing, and an implementation plan (financial, timeframes, staffing, and legislative requirements).

OTHER

PUBLICATIONS AND PRESENTATIONS

"Evaluation of Federal Social Programs--An Uncertain Art", Book review, The Journal of the Institute for Socioeconomic Studies, Vol. V, No. 1, Spring 1980.

The Windfall Profits Tax: A Comparative Analysis of Two Bills (Primary author of chapter on Expenditure Issues), Staff Working Paper, Congressional Budget Office, Congress of the United States, November 1979.

"Residential Energy Conservation and Impacts of Residential Conservation Proposals", Staff Memorandum, Congressional Budget Office, Congress of the United States, October 1979.

"The Social Security Disability Insurance Program: Growth, Characteristics of the Disabled, and Implications for Reform", Paper Presented at the Fifth Annual Convention of the Eastern Economic Association in Boston, Massachusetts, May 1979.

"Welfare Reform: A Comparative Analysis of the distributive Effects of Several Proposals Before the 95th Congress", Paper Presented at the Annual Meeting of the Southern Economics Association in Washington, D.C., November 1978.

The Administration's Welfare Reform Proposal: An Analysis of the Program for Better Jobs and Income, (with G. William Hoagland), Budget Issue Paper, Congressional Budget Office, Congress of the United States, May 1978.

"Measuring Poverty", Public Welfare, Round-table Discussion, Spring, 1978.

Welfare Reform: Issues, Objectives, and Approaches, (with G. William Hoagland), Background Paper, Congressional Budget Office, Congress of the United States, July 1977.

Poverty Status of Families Under Alternative Definitions of Income, Background Paper No. 17 (revised), Congressional Budget Office, Congress of the United States, February 1977.

Budget Options for Fiscal Year 1977: A Report to the Senate and House Committees on the Budget, (co-author Income Assistance Section), Congressional Budget Office, Congress of the United States, March 1976.

Growth in Government Spending for Income Assistance, prepared by the Congressional Budget Office for the Committee on the Budget, United States Senate, Washington, D.C., December 1975.

The Colorado Tax Burden Under Alternative Income Concepts and Tax Shifting Assumption: A Case Study for Fiscal Year 1972, Doctoral Dissertation, University of Colorado, June 1974.

Colorado State Tax Profile Study, (with Reuben A. Zubrow and Dean C. Coddington), Colorado Legislative Joint Committee on State and Local Finance, Denver, Colorado, October 1973.

The Problem of Obtaining and Using Resources in Education: Some Proposed Programs for Purposive Change, (with several authors), National Institute of Education, U.S. Department of Health, Education, and Welfare, December 1971.

PROFESSIONAL AFFILIATIONS

American Economic Association

RANGE OF EXPERIENCE

His experience covers many disciplines such as organizational and productivity reviews, program evaluation, management science, economics, operations analysis, energy programs, regulatory economics, systems design and implementation, data processing, and public administration.

EDUCATION

D.B.A., Operations Research & Economics, The George Washington University

M.B.A., Information Sciences, The George Washington University

B.S., Civil Engineering, United States Military Academy

EMPLOYMENT HISTORY

Price Waterhouse: Partner, 1979 to date; Senior Manager, 1978 to 1979; Manager, 1973 to 1978.

Cost of Living Council: 1971-1973, Director, Economic Analysis Division; Deputy Director, Policy Division; Chairman, TLP Task Force; Member, Productivity Task Force.

Leasco Information Products, Inc.: Controller, 1970-1971

U.S. Army Officer, stationed in North Carolina, Vietnam, and Virginia, 1965-1970

SELECTED EXPERIENCE

Food and Nutrition Service.

Directing an evaluation of the Food and Nutrition Service's Women, Infants and Children (WIC) Farmers' Market Coupon Demonstration Program. Under this program, nutritionally at risk women and children are provided coupons redeemable for fresh fruits and vegetables sold at participating Farmers' Markets. The study assesses the nutritional benefits and dietary changes of women and children participating in the program, as well as the financial benefits of the program for farmers. Findings are based on a survey of a random sample of 2,640 WIC participants and 400 farmers.

Project Director on IC with the Energy Information Administration.

This multi-task contract covered primarily statistical and quantitative analysis for the EIA. It required sophisticated statistical analysis for the energy gathering division of EIA and included quality control reviews of the statistical procedures. In addition to being project director on the above task order contracts, Dr. Laughlin has served as project partner on several tasks under other IQC's including Montgomery County, Department of the Navy, and Department of Energy.

Project Director of Multi-Task Contract for the Internal Revenue Service.

Supervised many projects himself but also coordinated resource allocation and activity on other tasks. Tasks involved primarily management studies and quantitative analysis, but included tasks on personnel policy, accounting policy, and system design. There were no cost overruns on any of the tasks.

Fish and Wildlife Service.

Partner in charge on a survey to estimate motorboat fuel use by recreational boaters for the U.S. Fish and Wildlife Service. The purpose of this survey is to determine the percentage of Federal fuel excise taxes to be deposited in the Aquatics Resources Trust Fund. Findings are based on 6,244 telephone interviews drawn through random digit dialing on the national level and 43,150 mail surveys drawn from boat registration lists on the state level.

Managing Multi Task Contracts Contract Administrator and project Director of Indefinite Quantity Contract with the Veterans Administration.

As project director, supervised 7 tasks himself and provided the contact point for the remainder of the 17 tasks performed under this contract. Served as quality control reviewer on all projects. Contract was completed with no cost overruns on any of the projects. Tasks involved primarily resource management and related studies, including cost benefit analysis, office automation studies, financial systems, procurement systems, clinical and hospital administration systems, statistical quality reviews, and comparative studies.

Project Director for the Multi-Task Contract with the U.S. Postal Service.

This multi task contract covered primarily economic and rate making studies. Over 20 tasks have been performed under this contract. The USPS recompeted the contract and selected Price Waterhouse both times.

Contract Administrator and Project Director on Multi-Task Contract with the National Oceanic and Atmospheric Administration.

Presently monitoring this contract that covers management and administrative studies. The scope of work includes management studies in not only NOAA's divisions, but is also a vehicle for contracting with other portions of the Department of Commerce.

Department of Housing Urban Development.

Project Partner on an independent assessment of The Office of Public and Indian Housing. The purpose of this review is to document, assess, and offer recommendations for the improved operation of HUD's public housing program.

Quality control officer on an engagement to design and implement a Multifamily Delegated Processing Model. The product of this engagement will be a flexible model applicable to field offices across the county for multifamily full-insurance processing that reduces financial risk to HUD.

PERSONNEL AND HUMAN RESOURCE ENGAGEMENTS

Partner in Charge of the Personnel Committee Within Price Waterhouse Handling all Professional Evaluations and Promotions.

Designed and implemented the employee promotion and evaluation data base being used at the Price Waterhouse office in Washington, D.C. Responsible for recruiting and personnel reporting in a division of over 60 professionals in Washington, D.C.

Project Partner on a Project to Evaluate to Effectiveness of the Cooperative Effort Incentive Pay Program at the IRS

The evaluation included a review of the salary structure for the IRS at the various service centers throughout the U.S. The project involved statistical analysis as well as in-depth interviews at the IRS central office and all 10 of the service centers. The report was the basis for a decision by the IRS to continue the program and look for opportunities to expand it.

Project Partner on an Engagement with the Virginia Department of Highways and Transportation to Evaluate their Human Resource Planning System.

The evaluation involved extensive data analysis and data collection through interviews and projections of human resource needs. It further involved the development of a complex spreadsheet model to be used by the department. Our recommendations also included the integration of the human resource planning system with a human resource monitoring system to provide management with current as well as projected manpower requirements.

Evaluated Several Timekeeping Packages for the Veterans Administration's Department of Medicine and Surgery.

The evaluation included comparisons of several packages and included interviews with five medical centers throughout the U.S., as well as extensive interviews in Washington, D.C. The report was the basis for a decision by the Agency to select a time and attendance package.

EXAMPLES OF INDIVIDUAL PROJECTS DIRECTOR

Technical Review of Cost Benefit Handbook.

Directed a detailed technical review of the Veterans Administration proposed Cost-Benefit Handbook. The Handbook was designed to serve as a "How-to" guidebook and reference manual for VA personnel in assessing purchasing and other financial decisions. The review included a thorough assessment of the methodologies suggested, and the organization of the handbook.

Veterans Administration.

Conducted a cost benefit analysis of a \$200 million decentralized computer system that had been installed in 172 Veterans Administration Medical Centers nationwide. The study considered all aspects of productivity improvements, both personnel and material. The method employed for this cost-benefit analysis followed the guidelines of OMB Circular A-94, but additional techniques were added which were later adopted by the VA as a standard for its cost-benefit analysis.

Army Productivity Program.

A key feature of the Army productivity study was an investigation of the costs and benefits of various parts of the Army productivity program, including its Gain-sharing program.

IRS Accounts Receivable Study.

Directed a statistical and data analysis engagement to study the Internal Revenue Service's Accounts Receivable. This project involved extensive analysis of management information system data to assess the causes of the rapid growth in the IRS's 56 billion Accounts Receivable.

Army Productivity Management Study.

Directed firm participation in a project to restructure Army productivity improvement programs. These programs include Commercial Activities (Circular A-76 Studies). Manpower Staffing Standards System (MS-3). Capital Investment Programs, Methods and

Standards, Quality Circles, Value Engineering, and Productivity Gain-Sharing. Identified incentives to productivity enhancement and patterns of implementation at the installation level.

Navy Shore Base Readiness Analysis.

Directed an effort designed to improve the Navy's abilities to identify and justify resource requirements for its shore establishment. This project involved the development of objective criteria to measure report on the readiness of a diverse set of shore bases. The project also included the application of Shore Requirements, Standards, and Manpower Planning System (SHORSTAMPS) and Shore Manpower Documents (SHMD) Program staffing standards to workload data in order to identify objective criteria for personnel readiness. The project also involved the development of statistical models which relate readiness to resource inputs and workload as well as systems application for the management of resources and readiness information and projections.

American Productivity Center Studies.

Associate of the American Productivity Center (APC) dealing with matters of productivity measurement and analysis. As an associate, conducted three case studies of productivity programs at General Foods, IBM, and United Airlines. These case studies were used by the APC as models for future case studies developed by the Center.

Manufacturing Productivity System.

Prepared a productivity reporting and analysis system for a manufacturing association addressing methods for proper productivity measurement for various product lines.

Price Commission Productivity Task Force.

Member of the Price Commission's Productivity Task Force, which was charged with implementing the Commission's policy on productivity offsets to price increases. The productivity policy included an analysis of recent productivity data for over four hundred industries and required a thorough study of historical productivity trends as well as short-term projections.

Productivity Information System.

Conducted a study for an association of manufacturers on the feasibility and cost of developing an Industry-wide productivity information system. Included in the study was an analysis of productivity for the industry both for a twelve year trend and for a five year trend.

Productivity Measurement Systems.

As an associate of the American Productivity Center, participated in various planning activities at the Center. Included among these activities were a review of productivity measurement systems, a design of a survey to collect productivity data from several thousand manufacturers and service organizations, and a basic training course on productivity concepts and measurements.

IRS Returns Processing Division.

Directed a management review of the project management system. This project included the development of information requirements definitions and the design of a system to enable the division to capture, track, and analyze its related workload. The team also reviewed numerous software packages which address these functions and recommended the one most appropriate.

Council on Wage and Price Stability.

Served on the Committee of the American Institute of Certified Public Accountants (AICPA) Council on Wage and Price Stability (CWPS) to advise the Council on matters pertaining to economic controls. As part of his role on this committee, Dr. Laughlin participated in discussions with Council members concerning reporting policies and procedures.

OTHER

PROFESSIONAL AND BUSINESS AFFILIATIONS

Associate, American Productivity Center

Institute of Management Consultants

Society for General Systems Research

Registered Professional Engineer

CHRISTINE G. SNYDER

Position	Regional Audit Support Partner - Southeast Region Computerized Information Systems Audit and Business Services Practice
Education and Certifications	<p>MBA, Accounting, Loyola College, Maryland</p> <p>BA, Foreign Languages, Magna Cum Laude, College of Notre Dame, Maryland</p> <p>Certified Information Systems Auditor (CISA)</p> <p>Certified Systems Professional (CSP)</p>
Range of Experience	<p>Ms. Snyder has significant experience in internal and EDP audit management and information security consulting. She has managed and conducted financial, operational, and EDP audits and has established EDP audit functions from the development of mission statements to implementation of computer-assisted audit programs. She has managed and conducted technical audits (telecommunications, security) and large security engagements. She has been a financial systems consultant and has participated in accounting standardization and mechanization projects.</p>
Professional and Business History	<p>Price Waterhouse: Principal, 1991 to present; Senior Manager, 1988 to 1991; Manager, 1987-1988.</p> <p>The Black & Decker Corporation: Senior EDP Audit Manager (North America, South America, Australasia), 1983-1987.</p> <p>AT&T Technologies, Inc.: Section Chief, Internal Audit, 1979-1983; Accounting Associate, 1977-1979.</p>
Professional and Business Experience	<p>Managed the data security engagement for a major airline. Included an assessment of the current security environment, development of policy and mission statement, development of long-range plans to implement access control software (ACF2), and implementation of the software.</p> <p>Managed and performed a review of the implementation of access control software (TOP SECRET) for a large government agency. Included a review of management and internal controls, performance, and capacity issues in this multi-CPU, 50,000 (projected) terminal network.</p>

**Professional
and Business
Experience
(continued)**

Responsible for the establishment of the EDP Audit function and administration of audit activities for a Fortune 500 manufacturing company. Covered territories that generated a gross sales value of \$815,000,000 and included 7 major data centers and 5 minicomputer installations. In the U.S. alone, responsible for coverage of approximately 55 data bases, 70 major application systems, and 30 major projects under development.

Managed a large engagement for a professional organization to update and extend the premier publication on the audit and control of automated systems, the System Auditability and Control Report. Principal author of the "Executive Summary" module.

Managed the development of an expert system for the Internal Audit department of a Fortune 10 audit client. Included both software development and development of a knowledge base to address EDP audit and control issues and to facilitate the integration of financial and EDP audit activities.

Managed and conducted a third-party review of a credit card processing center. Included review of general and application controls.

Managed general controls reviews, application system reviews, system development reviews, and special projects (disaster recovery planning, implementation of security software, data base conversions, and telecommunications audits).

Responsible for development of computer assisted audit techniques that yielded 25% time reduction in financial audit assignments.

Planned, supervised, and performed financial, operational, and EDP audits for a manufacturer of telecommunications equipment.

Performed pre- and post-implementation audits of Accounts Payable system that involved extensive effort in the development and use of computer assisted audit techniques.

Developed, tested, and implemented corporate-wide computerized audit system used by 22 locations to audit standard cost revisions.

Increased the efficiency of a financial auditing organization by 25% in the audits of cost revisions and accounts payable through the development of computer assisted-audit techniques.

**Professional
and Business
Experience
(continued)**

Performed a computer controls review, encompassing an assessment of the general computing environment and application system controls for a producer of stone products.

Performed a quality assurance review (peer review) of the internal EDP audit function of a large (Fortune 100) manufacturer of grocery products. Developed work programs for the review; conducted interviews with Information Services/internal Audit executives; evaluated quality of work, compliance with professional standards, and value to the company; and reported findings and recommendations to the audit committee.

Participated in and performed development, testing, implementation, and documentation of major systems for a large manufacturer of telecommunications equipment. Included: corporate payroll system, corporate accounts payable system, accounting results system, and labor distribution system.

Completed requirements definition and implementation planning for a contracts and rebates system for a medical products manufacturer.

**Hardware and
Software
Environments**

Hardware - IBM 3090, 308X, 303X, 43XX, System 34-36-38, Nixdorf, Seimans, IBM PC

Software - MVS/ESA, MVS/XA, OS/MVS, DOS/VSE, VM, TSO/SPF, ROSCOE, IMS, IDMS/R, CICS, TOP SECRET, ACF2, WordPerfect, LOTUS 1-2-3, DOS, CULPRIT/EDP Auditor

**Speaking
Engagements**

15th and 19th Conferences on Computer Audit, Control and Security

Institute of Internal Auditors - North Jersey, Baltimore, Suburban Maryland, Syracuse chapters

EDP Auditors Association - Capital Area, Baltimore Chapters

**Speaking
Engagements
(continued)**

5th Asia Pacific Conference on Information Systems Control

Systems Auditability and Control Preview Conference

Pennsylvania State University - Guest Lecturer

Publications	Author of Article, "An Audit of Microcomputers," published in May 1986 Issue of <u>EDPACS - The EDP Audit, Control and Security Newsletter</u> Author of "Executive Summary" Module - <u>Systems Auditability and Control Report</u>
Awards	Recipient of the Black & Decker Chief Executive Officer Exceptional Performance Award for worldwide standardization of EDP Audit objectives through the development of an EDP Audit Standards and Programs Manual. Recipient of AT&T Technologies, Inc. Audit Excellence Awards for audits of Fixed Assets and Inventories. Recognition for innovative methods, development and use of audit software, and significant findings.
Professional and Business Affiliations	Member, Institute of Internal Auditors Member, EDP Auditors Association Member, Information Systems Security Association Member, Mid-Atlantic TOP SECRET Users Group

CLASS II

RANGE OF EXPERIENCE

Extensive functional experience in financial management and auditing. Specific experience includes general accounting, management and financial auditing, operational analysis, internal control reviews, strategic planning, fiscal and general accounting, training, coordination field operations, budget management and legislative activity, cash/funds management, fiscal policy analysis, coordination of field operations, procurement and contract management.

Programmatic experience in housing, human services and public health.

EDUCATION

M.A., Professional Accounting, Loyola College of Maryland.

B.S. Administration (Honors), University of Ghana.

Certified Public Accountant (CPA), State of Maryland

EMPLOYMENT HISTORY

Price Waterhouse: Manager, Office of Government Services, Management Science & Economics Group, Washington, D.C. 1990 to present.

Bert W. Smith Jr. & Co. CPA's & Consultants: Director of Consulting Services, 1988 to 1990,

Maryland Child Support Administration: Director of the Office of Budget & Fiscal Services, 1984 to 1988.

Towson State University: Adjunct Professor, 1983 to 1985.

Department of Employment & Training: Internal Auditor, 1983 to 1984.

Maryland Department of Human Resources/Social Services Administration: Budget Analyst, 1982 to 1983.

Maryland Department of Human Resources/Office of Fiscal Services: Accountant/Auditor, 1980 to 1982.

Maryland Department of Licensing & Regulation: CPA Review Officer, 1980.

Kaiser Foundation Hospital: Hospital Administrative Assistant, 1979.

Societe Generale De Superintendent, Switzerland: Management Trainee, 1977.

Blackwood Hodge (Ghana) Ltd.: Inventory Auditor (1976).

SELECTED EXPERIENCE

Financial Management and Auditing

Maryland Child Support Administration. Director of Budget and Fiscal Services.

As the Director of Budget and Fiscal Services, Mr. Addo was responsible for a statewide program with a \$150 million in child support collections, an accounts receivable of over \$450 million FY 1988 and a staff of 16 professionals including auditors, fiscal and budget specialists and accountants.

Responsibilities included:

- General Accounting - the approval of expenditures; maintenance of accounting ledgers; preparation of financial/statistical reports; cash management; bank reconciliations, end of year closing, fund transfers; Federal funds drawdown, chart of accounts system, cost allocation plan and monitoring of expenditures.
- Fiscal Policy Analysis and Planning - the issuance of accounting policies and the review of federal and state proposed regulations for financial impact; cost benefit analysis; development and maintenance of the child support fiscal manual, including revisions, additions and deletion of policies and procedures.
- Fiscal Program Management - the design of systems for accounting/reporting for child support collections including interception of tax refunds, lottery earnings and unemployment benefits; wage attachments; development, conversion and implementation of a PC based financial system. Interface with several State of Maryland databases including Baltimore and Annapolis Data Centers.
- Audit Management - the planning, scheduling and conducting of child support program audits; coordinated "external" audits including federal government, State Legislative, and independent CPA audits; and the development and monitoring of implementation of corrective action plans.
- Budget Management and Legislative Activity - the planning, development, defense of the annual child support program budget.
- Fiscal training - of all child support staff (over 800) including: state, local offices and cooperative reimbursement agency staff. This involved the determination, design, development, delivery and evaluation of required training.

- Procurement and Contracts Management - definition of specifications; solicitation of sources; preparation of awards and administrations of contracts using various selection processes, including sole source, invitation for bids (IFBS) and competitive negotiations (RFPs).

Maryland Department of Human Resources/Social Services Administration. Budget Analyst.

As Budget Analyst, established and maintained overall budget accountability for Federal and State funds. Developed a microcomputer supported reporting system for expenditures, budget tracking and variance analysis. Developed, implemented and monitored a statewide foster care payment system.

Maryland Department of Employment & Training. Internal Auditor.

Internal auditor responsible for developing and professional conducting operational action plans arising from audit exceptions. Coordinated audit work of external auditors and prepared responses to audit exceptions for top management. Planned and conducted tri-annual Department of Labor Quality Control Appraisal.

Maryland Department of Human Resources/Office of Fiscal Services. Accountant/Auditor.

Accountant/Auditor responsible for monitoring compliance with generally accepted accounting principles and adequacy of internal controls regarding collection, disbursement and reporting of funds of twenty four subdivisions of the Department.

Maryland Department of Licensing and Regulation.

Responded to policy questions arising out of the code of ethics and general issues regarding the CPA examination. Developed uniform fiscal procedures.

Blackwood Hodge (Ghana) Ltd.

Supervised the annual physical inventory audit team. In addition, maintained the petty cash ledger. Responsibilities included daily posting, end of month balancing and reconciliations.

Organizational Analysis and Special Studies

Department of Housing and Urban Development--Pricing Review for Proposal. Project Manger.

Project Manager on a review of this cost proposal to provide advertising services for foreclosed HUD properties. This limited scope review focused on the reasonableness and appropriateness of proposed costs for this nationwide advertising campaign.

National Oceanic and Atmospheric Administration (NOAA) and the European Organization for the Exploitation of Meteorological Satellites (SEUMETSAT)--Feasibility Study of Joint Ventures. Project Manager.

Project Manager on this feasibility study of joint collaborative efforts for the procurement and launching of weather satellites between the National Oceanic and Atmospheric Administration (NOAA) and the European Organization for the Exploitation of Meteorological Satellites (EUMETSAT). The study involved analyses of the governmental, intergovernmental, and industrial policy issues; technical and business issues; legal barriers and risks; and financing options and issues associated with costs of procurement of joint vs. separate satellites.

Department of Housing and Urban Development--Delegated Processing System. Lead Analyst.

Lead Analyst for cost processing functions of this multi-family insurance underwriting program. This engagement involved the design of the cost estimation functions of various phases including conditional, firm commitment and the construction phases; cost certification; identification of tasks suitable for delegated processing; design of delivery systems and appropriate controls. The project involved visits to selected HUD Regional and Field Offices and HUD headquarters in Washington, D.C.

Associated Catholic Charities (ACC)--Indirect Cost Analysis. Project Manager.

Project Manager on this engagement to recommend the indirect cost rate to equitably allocate allowable indirect costs to governmental and other contracts of the ACC. The study resulted in an indirect cost allocation plan and a determination of indirect cost rates for two prior years and a provisional rate for the current year.

Associated Catholic Charities, Washington, D.C.--Strategic Planning. Co-Project Manager.

Co-Project Manager on this strategic planning retreat to clarify ACC's mission statement, set goals and objectives and implementation strategies. The planning session identified ACC's organizational strengths and weaknesses, opportunities and challenges and both short and long term strategies to accomplish agency goals in the light of diverse and competing interests of stakeholders, limited and shrinking resources and an ever-expanding client base.

Performance and Operational Auditing

Philadelphia Department of Human Services (PDHS). Deputy Project Manager.

Deputy Project Manager on a study of the contract management functions of the largest human service agency in the state of Pennsylvania. This agency utilized private providers for most program service delivery including Medicaid, day care and foster care. The project

focused on manual and automated workflow processes, fiscal and payment procedures, internal controls and management reporting systems.

D.C. Department of Human Services.

Co-Project Manager on this engagement to review foster care and medicaid claims for retroactive adjustments and also design a system for current claims. This project involved a comparative analysis of case establishment systems of selected states, case files reviews for determination of eligibility over a two year period. This project identified several millions dollars in retroactive adjustments and a new system for tracking and monitoring foster care and medicaid expenditures.

D.C. Office of Child Support and Paternity Establishment. Co-Manager.

Co-Manager on a program improvements project to improve the operations of the D.C. Office of Child Support and Paternity Establishment. The project included the development of a fiscal procedures manual and training to District of Columbia Government officials on the new model of operations.

Maryland Child Support Enforcement Administration.

Conducted performance audits of local departments of social services and cooperative reimbursement contractors to determine program achievements relative to contract/program goals and performance indicators.

Other Experience

Towson State University, Maryland.

Adjunct Accounting Professor with a course curriculum that included Current Assets and Current Liabilities, Stockholders Equity, Dilutive Securities and Investments, Issues Related to Income Measurement (such as pension, taxes, and leases) and Preparation and Analysis of Financial Statements.

Kaiser Foundation Hospital, Honolulu, HI.

Hospital Administrative Assistant responsible for special projects. Prepared a cost study in outpatient surgery for all procedures. Management engineering studies for the Medical Records department. Conducted an audit into linen-laundry usage for the Housekeeping department. Participant in the annual budgeting process. Participant in Personnel department grievance hearings. Analyzed classification for staff and job development for new responsibilities and functions.

Societe Generale De Superintendent, Switzerland.

Management Trainee doing accounting analysis of monthly performance reports of international subsidiaries. Review of quality/quantity appraisal methodologies for certification of payments for imported goods. Buy/lease proposal studies for new capital investments.

OTHER

Technical Platform

Lotus 123, Harvard Graphics & WordPerfect

HONORS AND ACHIEVEMENTS

Acknowledgement by Maryland CPA Association for contributions to the Auditing and Financial Reporting Package for Examination of Governmental Units - a five part publication for use by the governmental auditor (June 1985)

PROFESSIONAL MEMBERSHIPS

Association of Government Accountants

Maryland Association of CPAs

American Institute of CPAs

National Child Support Enforcement Association

Position	Senior Manager, Management Consulting Services, in the Upstate New York Group
Education	M.B.A., Finance and Quantitative Methods, Boston University B.S., Engineering Physics, University of Illinois
Range of Experience	All phases of systems development, including strategic planning, requirements definition, system design, programming and testing; software package selection and implementation; project management; functional department management; system controls review and design; business practice and profitability improvement.
Professional and Business History	Price Waterhouse: Senior Manager 1991; Manager, 1989 to 1991 First Federal Savings and Loan Association: Senior Manager, Systems Planning and Development, 1988 to 1989 Bausch and Lomb, Inc.: Manager, EDP Audit, 1985 to 1988 Deloitte, Haskins, & Sells: Manager, Consulting Division, 1983 to 1985 Arthur Andersen & Co.: Senior Consultant, 1979 to 1983 U.S. Patent Office: Patent Examiner, 1974 to 1977
Professional and Business Experience	Direct Information Technology consulting practice in Upstate New York. Practice areas include: strategic information systems planning, requirements definition software and hardware selection, technical reviews, system development. Projects include: <ul style="list-style-type: none">o Advisor on fixed assets system development at water utility.o Review fixed assets system development plan for large electric utility. Involved business and technology requirements.o Participate in feasibility and design study for customer information system at energy utility.o Define requirements and select hardware and software for multi-plant automotive parts manufacturer.

Professional
and Business
Experience
(continued)

- o Implement hardware and software for tool and die manufacturer.
- o Review controls in new custom developed customer information system for a gas utility.
- o Evaluate and select hardware and software for a medical products manufacturer.
- o Conduct control reviews at various clients, including manufacturers, utilities, financial institutions and hospitals.

Managed systems development for a \$5 billion, 65-branch financial institution, with four managers plus 15 staff. Directed applications development, end-user computing, capacity planning, and administrative support.

Projects included:

- o Directed selection and implementation of hardware and software for a 400-station teller system. System uses distributed processing and state-wide communications network.
- o Managed study of database management system alternatives and development of three-year strategy.
- o Managed all operations tasks in acquisition of a competitor's large New York City branch, including in-house development of a data conversion system. Project included direction of staff at both institutions.
- o Shifted End-User Computing department role from maintenance to pro-active development of systems (including organization-wide annual budgeting system).
- o Developed and implemented a system to track usage and assign responsibility for all information services resources, with significantly extended range of forecasts. System resources include two mainframes, disk, tape, and over 900 terminals.

Professional

Responsible for full EDP audit function for a decentralized

and Business
Experience
(continued)

Fortune-500 manufacturing and distribution company. Prepared and executed audit plan to meet Board and senior management objectives for worldwide systems ranging from microcomputers to mainframes. Recommended control and system improvements to senior division and corporate management.

Projects included:

- o Participated on project team throughout selection, design, and installation of MRP-II system, working with division MIS and user personnel and consultants, to assure strength of system controls at each milestone.
- o Co-directed development of corporate systems disaster recovery plan, using ChiCor documentation package, including selection of hot-site vendor, application prioritization, and on-site testing.
- o Developed approach and supporting tools for financial auditors to review system procedures and controls at smaller domestic and international subsidiaries.

Managed Upstate New York information technology consulting practice.

Projects included:

- o Reviewed application requirements, recommended hardware and software upgrades, and developed documentation standards at Buffalo Public Schools.
- o Established system application priorities based on institution-wide costs and benefits for a large university, and put in place a process for prioritization.
- o Conducted requirements definition and package selection for national academic professional society.

Participated in and managed projects in custom systems development, hardware and software selection, package implementation, profit improvement, and business planning.

Projects included:

Professional
and Business

**Experience
(continued)**

- o Programmed on-line, network-structure database inventory control system for electric utility.
- o Designed and programmed billing system for a large newspaper.
- o Managed requirements definition and feasibility study for property records (fixed assets) for a gas and electric utility.
- o Directed several concurrent projects for a large energy utility, including property records system implementation, and MIS staff training program.

**Professional
and Business
Affiliations**

President, Rochester Chapter of Association for Systems Management

Certified Systems Professional

Selected to Who's Who in Finance and Industry (1987)

Member, Beta Gamma Sigma, National Business Honor Society

RANGE OF EXPERIENCE

Organizational Analysis and Development, Service Improvement, Human Resources Management, Performance Measurement, and Workload Analysis.

EDUCATION

M.B.A., Organizational Behavior and Development, The George Washington University, Washington, DC

A.B., Political Science with concentration in political behavior/political psychology, The University of California at Berkeley

Wage and Hour Studies Certificate, Cornell University, Fall 1989

"How to Diagnose and Manage Organizational Culture" workshop, NTL Institute, October 1988

EMPLOYMENT HISTORY

Price Waterhouse, Manager 1991 to present, Senior Consultant, 1989 to 1991; Staff Consultant, 1987 to 1989

The George Washington University, School of Government and Business Administration, Graduate Teaching Assistant, 6/85-12/86

SELECTED EXPERIENCE

Texas Office of the State Auditor:

Led the analysis of service delivery, human resources, and staff training and development issues on a third party performance audit of the Texas Central Education Agency (CEA). Key role in integrating the efforts of our project team, including four Price Waterhouse professionals, five subcontractor staff, and a member of our client's professional staff who was assigned to assist the project team full time. The objectives of the project were to identify major areas for improvement in order to facilitate the State's ability to maximize the benefits derived from its public educational programs in a dynamic environment. The project involved conducting a comprehensive review of the CEA's organization, policies, management, and key procedures which significantly affect its primary missions and objectives through a series of interviews with State and local educators, elected officials, and other key stakeholders. Made site visits to several Regional Education Service Centers and Independent School Districts. Defined roles

and responsibilities of central and regional office personnel to improve the cost-effectiveness of service delivery. Conducted a training and staff development needs assessment survey of central office personnel.

Austin (TX) Independent School District:

Managing a project to develop an employee classification and merit pay program for the Austin Independent School District (AISD), one of the largest public school systems in the country. The objective of the study is to provide AISD with: 1) a long term, strategic solution to its classification and compensation policies and practices that recognizes the nature of the current educational environment; 2) an integrated approach to managing compensation--an approach that focuses not just on compensation and the design of merit pay systems but also considers the whole organization and supports performance of the total team; and 3) a system that is acceptable to employees. A critical aspect of the study involves using interactive, consensus-building techniques to facilitate implementation of recommendations.

North Carolina Board of Education:

Lead analyst on a review of the salary and benefit program of North Carolina's local public school employees, including educators, administrators, and the full range of support personnel. The project involved surveying over 1,500 employees to develop a Statewide salary plan for 114,000 public school employees which is fair, equitable, and competitive enough to attract and hold high caliber employees. The study resulted in classification descriptions, quantitative compensable factor rating scales based on the classification descriptions, and a pay-for-performance program. Provided technical guidance to junior analysts.

Arabian American Oil Company (ARAMCO):

Oversaw the development of a training curriculum designed to improve the productivity of ARAMCO's finance organization. The project included developing written training modules based on in-depth job/task analyses and establishing performance based criteria for assessing on-the-job performance. The modules were on financial subjects; a significant number of the modules pertained to automated tasks and systems (e.g., JES, FALCON, APS, LOTUS). Employees used the modules to improve their skills and earn promotions within their respective career ladders. Recommended and implemented cost-effective procedural and technical improvements to reduce project costs and increase trainees' understanding.

U.S. Department of Housing and Urban Development

Leading the development of a 3 day training program on HUD's delegated processing program, which enables HUD field offices to hire outside firms to assist in processing

multifamily to assist in processing multifamily housing insurance applications. Trainees include senior level management personnel from field offices across the country. The training program includes a series a lectures, small group exercises, and a simulation.

United States Postal Service:

Recently served as a technical advisor to Price Waterhouse project management on the Firm's large scale study of the service performance of First Class Mail delivery in the United States. Advised project management on project procedures, quality control measures, and the role and responsibilities of project staff. Developed detailed procedures manuals to: facilitate the production of over two million pieces of test mail annually, establish integrated internal controls to ensure the quality of work performed and maintain the integrity of the study, and clarify the role and responsibilities of project staff who will produce and archive the test mail, including staff and management levels. Developed position descriptions for mail production staff.

Confidential Client (A Major Transportation Employee Union):

Participated in a team effort to evaluate the viability of a major transportation carrier. The project involved conducting a cost-benefit analysis of removing a significant asset from the carrier. Findings centered on the resulting impact on the carrier and its employee groups (unions). Results used to support major litigation.

U.S. Agency for International Development:

Consulted on an engagement to analyze accounting methodology relating to the Agency's General Ledger accounts. The project involved interviewing Agency personnel across various departments about practices and procedures used. Recommendations were made for the reconciliation of the suspense account to determine funds available within each appropriation.

Virginia Department of Education:

Consulted on a comprehensive performance audit of policies and management practices of the Board of Education and the Department of Education. The project involved interviewing State and local education personnel to position the Virginia education system for the year 2000; conducting a performance audit of the Department's organization and structure; integrating the goals and missions of the system into realigned roles and organizational relationships of the Board, Superintendent, and Department as they relate to the Local boards, superintendents, and principals; and building consensus and promoting awareness of external concerns and perceptions. Reviewed the Department's personnel policies and practices, including its classification system and processes for developing job descriptions. Assessed the extent to which personnel polices support overall goals and missions of the Board/Department.

Dallas Public Library:

Currently coordinating project team efforts on an organization and management review of the Dallas Public Library. The project involves: 1) reviewing the Library's structure in terms of its ability to support the Library's mission, objective, and key roles and responsibilities, 2) evaluating the economy and efficiency of the Library's operations, including broad scale operational issues as well as specific tasks and work processes, 3) assessing staffing issues in conjunction with the organizational aspects in order to provide the City with appropriate "big picture" recommendations regarding the appropriate use and number of managerial positions and internal equity of positions, and 4) conducting a customer service quality audit to provide the Library with a holistic assessment of program effectiveness. The study may result in alternative organizational designs, streamlined procedures, alternative service delivery mechanisms, realigned roles and responsibilities, and a customer service plan which profiles who the Library's customers should or could be, establishes criteria for measuring quality service, and describes methods for achieving improved service quality.

Connecticut Commission to Study the Management of State Government:

Lead analyst on an organization and management review of the Connecticut Department of Motor Vehicles. The purpose of the project was to improve the delivery and efficiency of services, identify sources of increased revenue or cost-savings, and determine opportunities for customer service improvement. The project environment included several active employee unions. The project involved a comprehensive evaluation of the Department's mission, goals, and objectives; establishment of program priorities; and methodology for evaluation of success in achieving stated goals and objectives. Interviewed central and branch office personnel and reviewed workload statistics to identify areas and methods for improvement. Visited similar agencies in other states to make comparisons of practices and performance. Investigated opportunities to improve productivity and efficiency by automating labor intensive, manual efforts and by altering work design, particularly in the area of registration renewal processing. Investigated potential overlapping responsibilities in the area of commercial vehicle safety inspections between the DMV and State Police. Provided technical guidance to junior analyst.

Montgomery County, Maryland:

Lead analyst on a review requested by the Department of Facilities and Services. The project had two main components: a review of Department-wide contract administration functions and a review of administrative activities within the Office of Architectural Services (OAS)--which was soon to be merged with another division to form the Capital Projects Office. The project included interviewing personnel across the Department to define the role and responsibilities of the newly formed Contract Administration Unit; identifying and evaluating alternative organizational designs for administrative staff in

the Capital Projects Office; identifying administrative activities that may be better performed on a centralized basis; determining the most effective and efficient work flow between the Contracts Administration Unit and the divisions; defining managerial versus administrative activities; and realigning the roles and responsibilities of administrative staff. Position descriptions of administrative staff were reviewed as part of our analytical consideration of the above issue areas. Provided technical guidance to junior analyst.

Oklahoma Legislative Service Bureau:

Consulted on an engagement to perform a management and organizational review of the State's children and family services system. The review involved interviewing State legislators and top agency officials about the delivery of services. The study resulted in a detailed description of the system, and profiles of the major State agencies, including the Departments of Education, Health, Mental Health, and Human Services, as well as the Commission on Children and Youth Services. Recommendations were made in the areas of agency management and organization, interagency coordination, staff workload, management information systems, and human resources to improve the effectiveness and efficiency of the services system.

The Council, City of Buffalo, New York:

Managed six Price Waterhouse staff on a project for the Taylor Law Impasse Committee. The project involved the development of position descriptions, evaluation of positions for placement on salary scales, and establishment of internally equitable and externally competitive salary scales. The project involved reviewing City positions represented by Local 650, including 260 job titles. A significant number of these white collar titles are for data processing, engineering, and financial/recordkeeping positions.

OTHER

Business Research

Assisted senior faculty member of a major private university with international trade research. Results used for presentations and published book. (Chikara Higashi and G. Peter Lauter, The Internationalization of the Japanese Economy (Boston, Kluwer Academic Publishers, 1987.))

Community Services

Designed and delivered communications workshops for members and advisers of various national student organizations on topics including: extemporaneous speaking, public speaking, and parliamentary procedures.

COMMUNITY AND PROFESSIONAL ORGANIZATIONS

American Society for Training and Development (ASTD), Member

University of California Alumni Association, Member

The George Washington University Alumni Association, Member

BEVERLY L. DIETRICH

POSITION	Senior Manager, Management Consulting Services, Dallas, Texas.
EDUCATION	B. S., Civil Engineering, University of Missouri
RANGE OF EXPERIENCE	Over ten years of experience with Operations and Application systems in Financial Institutions. She has been responsible for the development and maintenance of all application systems, and has directed the activities of a corporate data processing operation for a Regional Bank.
PROFESSIONAL AND BUSINESS HISTORY	<p>Price Waterhouse: Senior Manager, 1990 to date; Manager, 1989</p> <p>Centerre Bank, St. Louis: 1981 to 1989, Vice President of Information Systems Development, 1987; Assistant Vice President of Data Processing Operations, 1984 to 1987; Various Management and Project responsibilities, 1981 to 1984.</p>
PROFESSIONAL AND BUSINESS EXPERIENCE	<p>Responsible for overall management of a large engagement to provide systems and procedures for a Special Asset organization. Additionally, provided assistance to top management on a regular basis to ensure a successful start-up operation. Project included:</p> <ul style="list-style-type: none">• Design and development of a PC-based Asset Management Information System in order to facilitate the management of the organization's OREO portfolio• Enhancement and installation of PC-based Estimated Cash Recovery System which would allow asset managers to forecast income, expenses, and collections for impaired assets• Installation of the Adjuster Charge-Off Recovery System• Development of policies and procedures for Loan Operations and Credit Administration. Special Assistance provided included development of organization training strategy for Commercial Loans, and review of planned branch operational procedures <p>Managed the project to design Commercial Loan System enhancements to track loan-related expenses for Special Asset organization. The design consisted of a small subsystem which interfaced to both the Accounts Payable system and the Commercial Loan databases.</p> <p>Managed the project to design and install modifications to a CIF system for a Special Asset organization. In addition to designing system changes, developed user procedures and assisted with the set up of the new CIF Maintenance department. Also defined requirements and tested the customer conversion both for automated and manual processes.</p>

**PROFESSIONAL
AND BUSINESS
EXPERIENCE**

Conducted a vendor package selection for DDA, CIF, Account Reconciliation, and Account Analysis Systems for a government banking organization. Assisted with the requirements definition, prepared the RFP, conducted preliminary vendor presentations and site visits, and facilitated final selection process.

Conducted a review and analysis for the FDIC reporting and OREO systems and procedures for a Savings institution. Identified areas of improvement and made recommendations for changes to the systems interfaces and procedures.

Directed the development and maintenance activities for application programmers of a \$5 billion Regional Bank. Participated in the Annual Strategic Planning process for the Retail Banking Group, and managed programming resources to meet the needs of the various divisions.

Directed projects that were successfully completed in all major applications, including CIF, Deposit Systems, Loan Systems, Cash Management Systems and Item Processing.

Managed project to enhance systems and develop procedures for a consumer lending backoffice. Worked with users to define and prioritize required systems and procedure changes, estimated resource requirements, and obtained top management approval for additional funds to pursue project. Directed activities through successful completion over a six month period.

Directed the activities of a large Data Processing Operation for a \$5 billion Regional Bank. Areas of responsibility included data entry, output processing, computer operations, and production control.

Managed several mainframe and peripheral equipment installations, including conversion from IBM303X to 308X mainframe and conversion to new tape drive technology.

Selected and negotiated hardware acquisitions for data processing operation. Conducted studies to determine cost justification of implementing new hardware, including laser printing, cartridge tape, new CPUs and disk drives. Negotiated with vendors and with third-party leasing companies and worked with financial analysis department to determine most cost effective acquisition strategy.

Conducted analysis of Remote Data Processing Centers. Recommended downsizing and consolidations which resulted in substantial savings to the corporation.

RANGE OF EXPERIENCE

Statistics, Data Analysis, Statistical Modeling, Computer Programming, Sample Design, Quality Control, and Survey Research.

EDUCATION

M.S., Data Analysis and Statistical Computing (Statistics), Stanford University

B.A., Psychology, Northwestern University, Phi Beta Kappa

EMPLOYMENT HISTORY

Price Waterhouse: Senior Manager, 1990 to present. Manager, 1987 to 1990. Senior Consultant, 1985 to 1987. Staff Consultant, 1984 to 1985.

Federal National Mortgage Association: Policy Research Associate, 1983 to 1984.

Chicago Tribune: Market Research Analyst, 1980 to 1982.

SELECTED EXPERIENCE

Internal Revenue Service: Customer Satisfaction Survey

Survey manager for a survey of taxpayers contacted by the IRS Problem Resolution Program (PRP). Approximately 12,500 taxpayers will be contacted over the course of a year to obtain data used to evaluate the quality of PRP service at district offices and services centers.

Small Business Administration: Program Evaluation Survey

Project Manager on an evaluation of the Small Business Administration 7(a) guaranteed business loan program. Project design involved developing an evaluation design, survey instruments to screen and interview small business owners, a sample design, and an OMB clearance package. A total of 2,000 small business owners will be interviewed using Computer Assisted Telephone Interviewing (CATI). Of these, half will be program participants and half will be similar businesses that did not participate in the program. Data on opinion of the program, ability to obtain commercial financing, and business success/failure and growth will be collected. Analysis will focus on program costs and benefits and program design and delivery system.

Energy Information Administration: Statistical Surveys

Task leader on numerous tasks to provide statistical support to the Energy Information Administration of the Department of Energy on annual and monthly surveys of petroleum product sales. Tasks included:

- Modeling:
 - alternative procedures to determine areas for improvement to procedures for:
 - nonresponse imputation
 - data editing
 - variance estimation for unequal probability sample
- Sampling:
 - determined need for sample augmentation
 - designed sample for survey of nonrespondents
- Analysis of survey data and survey research techniques
 - designed and tabulated follow-up survey of nonrespondents. Conducted sample design, questionnaire design, and interviewer training. Supervised data entry, editing, and tabulation
 - developed performance statistics to monitor the effectiveness of nonresponse follow up and data verification
 - conducted an analysis of nonsampling error
 - conducted an analysis of data quality
 - conducted a comparative analysis of two frame development surveys to determine changes in the petroleum marketing industry
- Software development of systems to:
 - compare monthly and annual data
 - evaluate the effect of individual reports on published estimates
 - evaluate the effect of revised responses on published estimates
 - compute coefficients of variation

Veterans Administration: Statistical Quality Control

Directed a validation of the methodology for statistical quality control for the administration of over \$14 billion in compensation, pension, and education benefits in Veterans Administration programs. Review focused on issues involving methods for quality measurement, sample sizes, sample design, quality standards, accuracy of quality measurements, program costs and benefits, and sample selection techniques.

Federal Telecommunications Service (FTS2000) Technical Assistance and Management Services (TAMS)

Provided assistance to the General Services Administration in its management of the FTS2000 contract. FTS2000 is the new federal government intercity telephone network. Specific assistance included:

- Assisted in developing a conceptual design for a billing verification system. Addressed potential invoice errors, alternative verification methods, and applications of sampling.
- Assisted in developing a conceptual design for an FTS2000 revenue forecasting system.
- Reviewed sample designs and procedures for selection of call records for invoice verification. Reviewed sample designs and estimation procedures for estimating vendor billings in violation of contract clause.
- Task manager for task to develop key performance indicators for management of bill processing activities.
- Task manager for task to compare FTS2000 contract rates to commercially available telecommunications service prices.
- Task manager for task to design decision support software for a model that conducts contract financial and technical analysis. Designed components to conduct demand analysis, optimization, pricing, and financial analysis. Analyzed data requirements and developed software requirements definition. Evaluated commercially available telecommunications software packages.

U.S. Postal Service: Transportation Cost System

Directing statistical aspects of the design of a nationwide Transportation Cost System (TRACS) for the U.S. Postal Service. TRACS collects data on purchased transportation costs by rate category of mail used to set postal rates. Developed sampling frame of mail movements for air, rail, and truck transportation; developed sample design;

conducted sample selection; participated in developing data collection forms and instructions; and monitored pilot data collection tests. Directed data editing of results and developed methodology for estimating percent of transportation costs attributable to rate categories. Developed approximate variance estimate. Provided support to expert witness during rate case.

U.S. Postal Service: Payroll Cost Analysis Study

Directed a project to attribute the cost of employees on "loaned to other" status to subclasses of mail. Task involved analysis of In-Office Cost System (IOCS) methodology, payroll records, labor distribution categories, and Cost and Revenue Analysis (CRA) Report methodology. Results will be used in rate case to determine postal rates.

U.S. Postal Service: Sample Design

Developed various sampling plans to collect data for cost variability analysis for the U.S. Postal Service. Projects involved (1) postmaster workload information, (2) plant load contract route information, and (3) post office window transaction information. Determined an appropriate sampling frame and developed sampling methods including selection procedures, stratification, sampling rates, and sample size.

Internal Revenue Service: Test of Survey Methodologies for Problem Resolution Program

Directed a test of survey methodologies for the IRS Problem Resolution Program (PRP). Five survey methodologies were designed, tested, and evaluated for feasibility, response rate, and nonresponse bias. The most promising method will be used on a regular basis to assess customer satisfaction and quality of program operations. Specific duties included designing questionnaire and survey methodologies (both mail and telephone), supervising conduct of survey, and analyzing survey results.

Internal Revenue Service: Employee Survey

Designed and conducted a survey to determine the effect of automation on 15,000 Internal Revenue Service Examination employees and on the examination organization. Primary responsibilities included designing and pretesting questionnaire, designing and selecting a sample of employees, developing a data collection plan, conducting the survey, and tabulating and analyzing survey results.

U.S. Department of Education: Quality Control Measurement

Database development and data analysis for a quality measurement study for the U.S. Department of Education. The project objective is to measure the quality of delivery of almost over \$18 billion of post-secondary financial aid under the Title IV programs and to evaluate and recommend quality improvement initiatives. A large-scale survey was

conducted to verify financial aid awards in-person with a sample of post-secondary institutions and students and their parents. Differences between actual and audited award amount were then used to develop statistical projections of program quality. Specific duties included input into questionnaire design, development of data analysis plan, and supervision of data editing and database development.

Veterans Administration: Cost-Benefit Analysis

Directed analysis on a cost benefit study on the Veterans Administration's (VA) automated systems for eight functional areas in its 172 medical facilities. Used data collected on-site to estimate the cost savings of the systems. Responsible for estimating system costs and evaluating the return on investment for each of the eight modules in the system.

Internal Revenue Service: Collection Resource Model

Principal Data Analyst on a resource modeling project for the Internal Revenue Service to design and implement a comprehensive computerized staffing model to estimate the incremental impact of staffing actions on the level and timing of revenue yields within the collection function. Specific duties included analyzing management information reports and databases to develop estimates of model parameters, conducting model validation and sensitivity analysis, and working with model systems programmers and end-users to promote understanding of model parameters.

Internal Revenue Service: Information Process Technology

Designed, conducted, and evaluated a survey of U.S. companies and federal agencies of the capabilities, placement, coordination, and dissemination of their information processing research function. Developed recommendations based on survey findings for establishing an information processing technology research function at the Internal Revenue Service. Principal responsibilities included identifying companies and agencies to interview, eliciting the cooperation of an appropriate interview subject within each organization, developing survey approach, designing questionnaire and interview guide, conducting interviews, and analyzing survey results.

Office Automation Survey

Analyzed the results of a survey on office automation at the Federal Trade Commission. Directed coding and keying of surveys and tabulated responses. Results were used to develop an automation plan to meet the needs of the 1,200 employees in FTC offices nationwide.

Market Research

Design, analysis, and evaluation of small, descriptive surveys of Chicago area photographic equipment and automobile consumers; of extensive mail survey on employee recruiting in the Chicago area market; of survey on employee attitudes toward building security; of survey of management training needs; and of several small telephone surveys on product awareness.

In-house liaison for total market survey done out-of-house. Assisted with subsample definitions and descriptions of Chicago market for weighing purposes. Analyzed demographic factors associated with newspaper readership over 76 city neighborhoods and 120 suburbs using regression analysis in SPSS.

Academic Grants

Using factor analysis, researched the dimensions of Northwestern University's questionnaire for student evaluation of instruction under a grant from the Psychology Department. Final report used to improve design of NU's evaluation questionnaire and presentation format for published evaluation data.

Performed data analysis to test a theoretical model for separating the effects of two highly correlated variables on a dependent variable. Data used had been collected by the

Department of Health, Education, and Welfare's National Center for Health Statistics. Work was done under a research assistance ship from the Stanford University Center for the Study of Youth Development.

Internal Revenue Service: Accounts Receivable

Directed a two-part study of the Internal Revenue Service's revenue accounting function. The first phase addressed accounts receivable, while the second addressed a conceptual design for a revenue accounting system.

- Phase I focused on identifying causes for rapid growth in accounts receivable. Analyzed available management information reports and held interviews with functional areas of the Service--including Examination, Collection, and Revenue Accounting--to identify trends and program changes that have affected accounts receivable. Identified six key contributors to growth and prioritized their impact on growth.
- Project team developed a new definition and reporting format for accounts receivable within IRS. Forecasted future growth in accounts receivable and realizable balance.

- In Phase II, reviewed the IRS's current systems for revenue accounting and cash management. Recommended a phased design toward more integration of various accounting functions and toward more management reporting.

Immigration and Naturalization Service: Labor Market Impact Study

Project Manager on an engagement to conduct a survey of foreign students with F-1 visas. Study addressed the potential labor market impact of changes in the regulations for foreign student part-time off-campus employment.

OTHER

PROFESSIONAL AFFILIATION

American Statistical Association

Washington Statistical Society

TECHNICAL SUPPLEMENT

Data processing experience Ten years of experience in the design development, and implementation of applications software for statistical analysis.

Language experience

FORTRAN, BASIC, COBOL, PASCAL

Hardware

IBM: 30XX, PC

UNIVAC: 1108

DEC: DEC-20

Operating systems

IBM: OS/MVS

Control Language:

Super WYLBUR

Application packages

Mainframe: SAS, SPSS/SPSSX/SCSS, BMDP PC: SAS-PC, SPSS-PC, Lotus 1-2-3,
Super Calc 2, Super Calc 3, Wordstar, Wordperfect, Crosstalk, PC-Talk

Range of experience

Mr. Goodhart has fourteen years of professional experience, with thirteen years of experience in data processing and information systems implemented around the world for clients in the federal government, state government, and the private sector. Mr. Goodhart has worked in all of the components of the systems development life cycle, including strategic systems planning, project management, analysis, design, construction, and implementation. He has filled both functional and technical roles, and has developed systems in numerous areas, including budgeting, accounting, purchasing, inventory control, and labor distribution.

Education

M.S.F.S., School of Foreign Service, Georgetown University, June 1976
B.A., Political Science, LaSalle University, June 1974
Certified Data Processor (CDP), 1983

Professional and business history

Price Waterhouse: Senior Manager, July 1988 to present; Manager, July 1985 to June 1988; Senior Consultant: July 1984 to June 1985; Staff Consultant: February 1983 to June 1984

Intellimac, Inc.: Systems Analyst/Programmer, September 1980 to February 1983.

Inslaw: Information Analyst, June 1980 to September 1980.

Practical Concepts Incorporated: Analyst, October 1976 to June 1980

Relevant professional and business experience

Department of Commerce--CIMS Improvement Project (5/90 to present)

The Commercial Information Management System (CIMS) helps the Department of Commerce promote exports by helping users to maintain databases of foreign contacts and U.S. exporters and also supports the production of market research reports.

Mr. Goodhart is the project manager on a project which will lead to a new release of CIMS through the completion of five tasks:

- Documentation of functional and information requirements in conformance

Relevant professional and business experience (continued)

with Federal Information Processing Standards Publication 38 (FIPS PUB 38)

- A cost/benefit analysis of the new release of CIMS
- Development of an implementation plan to install the new release of CIMS (including hardware/software installation, conversion, and training) at approximately 200 sites worldwide
- Analysis of the organizational impact of the new release of CIMS on the Office of Commercial Information Management (OCIM), the organization with the Department of Commerce which support CIMS
- Independent verification and validation of the development contractor's deliverables.

During the simultaneous execution of some of these tasks Mr. Goodhart has managed a team of up to ten staff.

Technical Environment: Wang VS series, IBM PC and compatible, TurboCASE (a Macintosh-based CASE tool)

State of North Carolina--Financial Systems Master Plan Development
(12/89 to 04/90)

Mr. Goodhart served as project manager on an engagement for the State of North Carolina's Office of the State Controller (OSC). Mr. Goodhart assisted OSC in the development of a statewide financial systems master plan, and the review and evaluation of statewide financial policies.

The master plan included the basic elements of a Strategic Information Systems Plan:

- Business Profile (the state's financial management mission, objectives, Critical Success Factors, and high-level requirements)
- Current Systems Environment
- Strategy Options
- Target Environment
- Implementation Plan

Relevant professional and business experience (continued)

Under Mr. Goodhart's supervision, the project team also analyzed the fit of Dun & Bradstreet Software's (DBS) Management Analysis and Response Systems for Government (MARS/G) software package to the state's requirements, and reviewed

the composition of the state's financial reporting entity. Mr. Goodhart managed a team of as many as nine staff members, including three partners.

Technical Environment: IBM 3090-600J, MVS/XA

General Services Administration (GSA)--Federal Telecommunications System 2000 (FTS2000) Billing Management System Design (8/89 to 11/89; 4/90 to 5/90)

FTS2000 is a government-wide system that replaces the current Federal Telecommunications System (FTS) intercity network and provides additional and enhanced telecommunications capabilities to the Federal government. The FTS2000 Billing Management System (FBMS) verifies the FTS2000 service contractors' billing data and manages related financial data for GSA's network operations.

Mr. Goodhart served as a technical manager on the task to develop the FTS2000 Billing Management System for Centel Federal Services. Centel is providing technical and management services to the General Services Administration as part of that government agency's effort to implement FTS2000. Mr. Goodhart participated in the development of a conceptual data model using the Pro*Kit CASE tool. He also wrote the Statement of Work section of a GSA Request for Proposal to acquire hardware and software for FBMS.

Mr. Goodhart also wrote interim manual procedures which GSA employees will follow to verify charges on FTS2000 invoices.

Technical Environment: DEC/UNIX (server), IBM PC/DOS (client), Pro*Kit Workbench, Oracle DBMS, Oracle application tools

Relevant professional and business experience (continued)

State of Maine--Maine Financial and Administrative Statewide Information System (MFASIS) (6/88 to 7/89)

Mr Goodhart managed the MFASIS accounting system team during the requirements definition, package evaluation and selection, and implementation planning phases of the project. MFASIS is a multi-year statewide project to assist Maine in the full system life cycle (involving package selection and modification) to implement statewide Human Resource, Accounting, Budget Preparation, and Purchasing systems.

Mr. Goodhart managed the Technical/Quality Assurance Team for the MFASIS project. The team documented transaction volumes, storage requirements, and CICS transaction estimates. He developed design, coding, and testing standards, and he also developed a project data dictionary application in Oracle.

Technical Environment: IBM 3090, MVS/XA, VM/CMS, JCL, TSO, ISPF, CICS, REXX, EXEC2, COBOL, American Management Systems Inc.'s Government Finance System software package (MFASIS environment); IBM PC-based ORACLE with SQL*Forms and SQL*MENU (data dictionary application)

Oregon Department of Transportation (ODOT)--State Transportation Accounting and Reporting System (STARS) Stabilization Project (2/88 to 6/88)

The objective of the project was to restore auditability and fiscal control by implementing a simplified accounting model and restructuring financial reporting.

Mr. Goodhart's tasks included development of ad hoc report programs to investigate the status of accounting files and preparation of system test plans, including the overall integrated test plan executed prior to live operation of the new system.

Technical Environment: IBM 3090, MVS/XA, CICS, TSO, ISPF, COBOL, Panvalet, DataManager, FileAid, Easytrieve Plus

State of Connecticut, Office of Policy & Management--Automated Budget System (11/87 to 2/88)

The Automated Budget System (ABS) project included the design, development

and implementation of a system to replace Connecticut's existing budgeting functions. This custom-developed system consists of more than 200 programs. It enables 107 agencies located throughout the state to prepare budgets using previous year's expenditure, personnel and labor cost data. The system encompasses budget preparation (operating and capital), budget to actual reporting and management planning.

Mr. Goodhart participated in the requirements definition and design of the Capital Budgeting System (CBS) component of ABS.

Technical Environment: IBM 3090/200, MVS/XA, CICS, DB2, COBOL

TECHNICAL SUPPLEMENT

DATA
PROCESSING
EXPERIENCE

Thirteen years of experience in all phases of the systems development life cycle for a wide variety of applications on microcomputer, minicomputer, and mainframe systems.

PROGRAMMING
SOFTWARE

COBOL, JCL, SQL, EASYTRIEVE PLUS, Ada, Pascal, C, Hypertalk, BASIC, Assembler, Wang procedure language

HARDWARE

IBM: 360, 370, 3090, PC, PS/2; Wang: VS 80, 85, 100, OIS
DEC: PDP 11/70; Apple: Macintosh SE and II
Others: Jacquard; custom systems based on the Motorola 68000 family of processors

OPERATING
SYSTEMS

MVS/XA, VM/CMS, Wang VS, MS-DOS, RSTS, Apple Macintosh System 6.0.x

SYSTEMS
SOFTWARE/
APPLICATIONS

IBM: TSO, VSAM, ISPF/PDF, CICS, Panvalet, EXEC2, FILEAID, DataManager, OS Utilities, ORACLE, Inquire, Lotus 1-2-3
WANG: VS TOTAL, VS Word Processing, VS Glossary, VS Inquiry, VS Report, Spread.
Apple Macintosh: MPW 3.x development environment, Macintosh Toolbox, Excel, Word, ORACLE, Hypercard, MacProject II, Macdraw II, Powerpoint, Director, Red Ryder

SOFTWARE
PACKAGES

American Management Systems, Inc. Government Financial System (GFS)
Dun & Bradstreet Software's Management Analysis and Response Systems for Government (MARS/G)
KPMG Peat Marwick's State Accounting and Reporting System (STARS)

CASE TOOLS

Pro*Kit, TurboCASE

Range of experience

Mr. Hills has over sixteen years of experience in document and text management systems, including micrographics and electronic imaging, litigation support, work product, case management, bankruptcy support, and records management-type applications. He has performed in all phases of large-scale project implementation, including: project management; requirements analysis; system/vendor selection and oversight; document preparation and control; coding and abstracting; data base administration; quality assurance; and user support and training. His experience with systems include micro-, mini-, and mainframe computers, and network environments.

Education

J.D. William Mitchell College of Law, January 1980.

B.A., Psychology, Carleton College, June 1974.

Professional and business history

Price Waterhouse: Senior Manager, September 1990 to present; Manager, January 1989 to August 1990.

Arthur Young, Law Firms Group: Manager, March 1988 to December 1988.

Atlis, Legal Information Services: Sales Consultant, January 1987 to February 1988; Manager, Consulting Services, September 1984 to 1987; Project Director, Western Operations, January 1984 to September 1984; Senior Project Manager, 1983; Project Manager, February 1982 to January 1983; Legal Services Manager, May 1980 to February 1982.

Professional and business experience

DEPARTMENT OF ENERGY EXPERIENCE

Sterling Software/Legal Information Management Division--Department of Energy (DOE) Litigation Support System
Project Director, (October 1983 to September 1984)

As the contractor for its lead outside counsel on this matter, Sterling Software designed, developed, and implemented a comprehensive litigation support system to defend DOE in nuclear exposure personal injury cases stemming from atomic weapons testing. The litigation support system implementation included acquiring, numbering, duplicating, screening, and coding complex data from over

Relevant professional and business experience (continued)

2,000,000 pages of documents. Processing involved over 200 people in three locations throughout the United States, including two government secured locations, and the development of special quality control standards and procedures.

As Project Director, Mr. Hills had overall project management responsibility. His duties included:

- Classified and non-classified staffing and training
- Schedule monitoring and management
- Establishing quality control standards and penalties
- Coordinating data and information flow between parties and facilities
- Budget and fiscal management
- Interfacing directly between client technical staff, the attorneys, and project staffs
- Design and implementation of subsequent and related data bases

Technical Environment: DEC VAX/VM, BASIS

Nuclear Regulatory Commission (NRC), Office of the Licensing Support System Administrator -- Licensing Support System (LSS)
Project Manager, (October 1990 to Present)

The LSS is an information management system that will provide access to the electronic images and full text of an estimated 20 million pages of documents. These materials are germane to NRC review of DOE's license application for construction of a high-level radioactive waste repository. DOE is designing, developing, and procuring the LSS. The LSS Administrator is tasked with LSS design and development oversight, and is responsible for the management and operation of the LSS. This includes: developing standards and procedures for the

identification, preparation, and submission of documentary materials in accordance with regulatory requirements for document submission to the LSS by participants (parties, potential parties, and interested government participants in the licensing proceeding); and evaluating and certifying LSS participant compliance with requirements.

As project manager, Mr. Hills' manages Price Waterhouse's role as a subcontractor to develop and implement an LSS Compliance Requirements and Evaluation Plan (CREP). The CREP tasks we are performing include development of:

Relevant professional and business experience (continued)

- Standards and related materials for the headers required for documentary materials
- Submission requirements and access protocols for technical data
- Standards for submission of hard copy and electronic images
- Guidance on the coverage of regulatory topical guidelines, exclusions, and privileged material
- Procedures on forwarding documentary material for the LSS
- A compliance evaluation program to ensure the proper identification, preparation, and submission of documentary material
- A comprehensive guidance manual for LSS participants on all of the above, and its maintenance
- A Quality Management Plan to ensure that the proper quality assurance measures are incorporated into the program

OTHER RELEVANT EXPERIENCE

Southmark--Bankruptcy Claims Support System
Technical Advisor, (April 1990 to July 1990)

The Southmark bankruptcy claims support system allowed the company's attorneys to analyze, manage, and access over 50,000 claims. The system supported their efforts to settle or dismiss critical claims, while complying with court-required filing and claimant notice provisions on numerous occasions. Use of the system was key to the company's success in obtaining bankruptcy court acceptance of a heavily contested reorganization plan within one year of the initial filing date.

As technical advisor, Mr. Hills organized the claims library, established claims/document filing and access procedures, assisted in the supervision of claims processing, served as an interface between the attorneys and the technical support staff in generating ad hoc reports, and set up and supervised an emergency ballot counting task force effort for the attorneys in Wilmington, Delaware just two days before the final reorganization plan determination by the bankruptcy judge.

Technical Environment: MS-DOS, Novell, Paradox

First Florida Bank--Imaging Feasibility Study
Document Specialist, (April 1990)

First Florida Bank wanted to determine the feasibility of using electronic imaging technology for its development of a centralized loan file management and disaster recovery program. The feasibility study was compared to an already-approved

Relevant professional and business experience (continued)

micrographics-based approach for all of its mortgage, installment, and credit card loan files.

As the document specialist on a team with three other imaging specialists, Mr. Hills conducted an analysis of document composition, conversion, and workflow issues, and determined and verified document volumes in each loan area of business. He conducted in-depth interviews with department supervisors, loan file users, and bank management. Mr. Hills also met with bank attorneys and facilitated agreement on the system design approach dealing with legal admissibility of evidence issues for documents reproduced from electronic images and the retention of key originals.

Sterling Software/Legal Information Management Division--Dresser Industries
Legal Information & Case Management System
Project Manager, (June 1987 to September 1987)

The General Counsel/Corporate Secretary required assistance in planning and designing a comprehensive information management system that would allow key departments to access and share information regarding key corporate documents and records, mergers and acquisitions, litigation case management, and litigation cost tracking and control. A critical issue facing the General Counsel was whether the system was to be PC or mainframe based. A critical system functionality included integrating data, full text, and word processing capabilities.

As Project Manager, Mr. Hills managed all aspects of the engagement, conducted individual and group interviews of law department, MIS, Corporate Secretary, and records management staff. He led the requirements analysis and definition tasks, evaluated Paradox as their preferred application software platform, designed the initial case/cost management application, and interfaced directly with the General Counsel/Corporate Secretary. He facilitated discussions between the law and MIS departments that eventually resulted in the implementation of a PC-based system that would be locally networked and linked with the mainframe.

Technical Environment: MS DOS, Paradox, DB2, BASIS

Relevant professional and business experience (continued)

Sterling Software/Legal Information Management Division -- The Pillsbury Company Law Department Automation and Litigation Support System
Project Manger, (February 1985 to November 1986)

Pillsbury required a system to automate its legal department that would integrate word processing, litigation support, case management, and attorney work product management.

As Project Manager, Mr. Hills was responsible for managing the design, development, and implementation for this integrated, turnkey system. A large litigation came up immediately after system acceptance, and Mr. Hills managed the implementation of complete litigation support capability using their in-house system, including:

- Taxonomy development
- Document preparation (numbering, copying, and batching) and control
- Document coding and quality control
- Case data base design
- Coding manual and procedures generation
- Litigation support supervisory and staff training
- Data base administration
- Attorney support functions
- Litigation support project management

Technical Environment: Wang VS, Informatics Word Processing Enhancements (WPE), Informatics BASIS/Wang Word Processing Interface (WPI), BASIS

Reports and publications

"Document Management for Construction Litigation," Co-authored with Jeff Parmet, *Construction Litigation: Representing the Owner*, Second Edition, 1989.

Co-Editor, *Legal Tech Newsletter*, 1988

"A Perspective On Image Management," *Legal Tech Newsletter*, December 1988

"'Recruiting' Help In Automation," *Legal Tech Newsletter*, October 1988

"Automated Work Product Systems," *Legal Tech Newsletter*, July and August 1988

"Two Divergent Roads To Success with Syntrex," *Legal Tech Newsletter*, June 1988

"What to Automate When", *The Bottom Line*, October 1983

"Introduction to Microcomputer Data Base Management Systems," *Association of Legal Administrators*, Nashville, 1991; San Francisco, 1990; and Toronto, Canada, 1989

"PC-Based Litigation Support Software," *Legal Tech Conference*, New York, 1990

"Attorney Work Product Management Systems," Moderator, *Legal Tech Conference*, New York, 1989

RAYMOND L. HIPSHER

POSITION	Senior Manager, Price Waterhouse Electronic Data Interchange (EDI) Consulting Group, Washington, D.C.
PROFILE	Mr. Hipsher has been involved in EDI systems design, development, implementation and maintenance for proprietary and standardized programs since 1980. He has extensive experience in standards development, project management, systems integration and application enhancement. He has in depth knowledge of government requirements and systems. He has spoken on the "Paperless Office" to numerous government groups and on Electronic Funds Transfer (EFT) to government, corporate and financial groups. Mr. Hipsher is the Chairman of the Government Subcommittee of ANSI ASC X12 and has served on the Board of Directors of the Data Interchange Standards Association, Inc., the Executive and Steering Committees of ANSI ASC X12 and as Delegate to the North American EDIFACT Board. He has six years of EDI standards development experience and has worked with government and health care industry groups.
EDUCATION	B.S., Accounting University of Alabama
PROFESSIONAL HISTORY	Price Waterhouse: Senior Manager, 1990 - present Manager, 1988 to 1990 Veterans Administration: Systems Manager, 1984-1988 Accountant, 1980-1983 Alabama Department of Revenue Business Tax Auditor, 1978-1980 Computer Systems, Inc. Systems Programming, 1977-1978 U.S. Marine Corps Military Justice, 1969-1977.

**TECHNICAL
EXPERIENCE**Leader of EDI Standards Development Committee

Chaired Government Subcommittee (GSC) of the American National Standards Committee (ANSI), Accredited Standards Committee (ASC) X12 for five years. Led the development and approval of seven American National Standards, two United Nations Standard Messages, and one Guideline for the use of an American National Standard by Government. Personally participated in the creation of four EDI standards from inception through development to approval by the ASC. Introduced, supported and gained approval of numerous changes to existing EDI standards to accommodate the needs of the user community.

EDI Implementation Project Manager

Project Manager for totally automated acquisition system emphasis on Capital Equipment Leasing for Fortune 100 petroleum company. Project included complete system design, development, implementation and training. System designed to replace all paper transactions with EDI messages and included development of streamlined menu driven PC package for distribution to trading partners allowing them to implement immediately. New standard EDI formats developed to support leasing transactions.

EDI Strategic Implementation Planning

Project Manager for centrally coordinated EDI Strategic Implementation Plan for a large midwest State. Project included identifying and analyzing data flows for major departments and agencies; evaluating data flows for potential EDI solutions; analyzing current and projected needs of hardware, software, telecommunications, education, training and support for EDI solution; analyzing related business issues, such as legal, audit, security, and organization impact; and establishing strategic plan identifying major short-term tactical issues.

EDI Review and Strategic Plan

Project Manager of EDI Review and Strategic Planning for Fortune 200 manufacturing company to identify opportunities to use EDI to improve efficiency and effective of data flows, and

**TECHNICAL
EXPERIENCE**
(continued)

establish Corporate Strategic Plan. Project included analyzing business operations and data flows of 14 subsidiary divisions, determining readiness of major business trading partners, and establishing a Corporate Strategic Plan for EDI.

EDI Systems Consultant

Project Manager for systems analysis, strategic and implementation planning for major service provider in an industry that had no previous EDI activity. Evaluated existing and proposed rewritten systems for EDI integration and planning. Coordinated strategic and implementation planning and assisted in trading partner relations. Evaluated and advised on hardware and software acquisition and configuration.

EDI Implementation Project Manager

Managed EDI implementations for receiving ANSI X12 invoices and transmitting NACHA CTX formatted electronic payments including ANSI X12 remittance advice. Project required extensive use of ANSI X12 standards; telecommunication support including EDI Value Added Networks and proprietary secured and encrypted funds transfer networks; extensive application systems interfaces; software evaluation; and user education and support.

Operations Manager of Appropriated Funds Control

Controlled allocation and monitored reporting of \$10 billion federal medical program. Designed and managed automated allotment and control system for top management fund distribution and reporting. Analyzed and formulated future budget appropriations and current expenditures by program and object class.

Medical Administrative Systems Project Manager

Managed system design, development, testing and implementation of medical center integrated funds control, accounting, personnel and procurement system. The system replaced numerous manual processes for funds utilization, obligations, payables, payments and receivables; personnel information, and supply procurement

**TECHNICAL
EXPERIENCE**
(Continued)

and inventory control. The integrated system accomplished substantial savings in personnel costs, timely processing, accuracy and management information for field facilities and automated the data interchange between 172 field facilities and a central dataprocessing and finance center.

Micro Systems Development Manager

Managed system design, development, testing and implementation for numerous micro systems including pilot paperless office project, accounts payable program, agency wide financial reporting, corrected W-2 program and field station financial operations profile. Utilized PC and multi-user micro systems in stand alone and networked configurations to automate manual processes. Significant savings were realized in reduction of personnel cost, improved timeliness and accuracy, and integration of systems for enhanced management information.

Financial Systems Analysis

Analyzed full array of financial systems for \$30 billion Controller's office to improve financial operations through new systems, systems enhancements and systems maintenance.

Medical Center Accountant

Planned, supervised and reported on full array of accounting functions at \$60 million medical center. Responsible for accounting operations, funds control, general ledger, cost accounting, financial reporting and accounts reconciliation. Trained junior accountants and technicians, and administered cooperative education program with the local university.

Medical Center Fiscal Accounts

Planned, supervised and reported on payroll, voucher audit, cashier and patient funds operations for a \$60 medical center. Responsible for bi-weekly payroll of \$1.4 million, \$14 million in payments for goods and services annually \$130,000 petty cash and \$600,000 in patients funds accounts.

**TECHNICAL
EXPERIENCE**

(continued)

State Tax Auditor

Audited business operations to enforce collection of approximately 100 state business taxes. Reviewed entire commercial business functions for determination of applicable business taxes and license requirements.

Systems Programmer

Designed, developed, tested and implemented application systems for inventory control, delivery load sheet information and route salesmen commission control for soft drink bottler.

Military Law Office

Managed administrative law offices processing pre-trial case preparation, administrative discharges, docket and post-trial review. Served four years as Chief General Courts-Martial Reporter.

**PUBLICATIONS
AND SPEECHES**

"Improving Productivity and Efficiency with EDI" presented at the Annual Meeting of the Council of Petroleum Accountants Society (CPAS), May 1990, Houston, TX.

"Government EDI Programs" presented at the EDI '90 Seminar, April 1990, Las Vegas, NV.

"EDI for Tax Administration" presented at the Federation of Tax Administrator's Computer Workshop, August 1989, Chicago, IL.

"EDI in Government" presented at the EDI '89 Seminar, April 1989, New Orleans, LA.

"Paperless Office" appeared in Government Computer News, August, 1985.

"EDI Standards" presented to Federation of Tax Administrators, September 1988, Washington, D.C.

"Electronic Invoicing" presented to National Bureau of Standards Conference *"EDI, Getting It Together in Government"*, May 1988, Gaithersburg, MD.

SPEECHES
(continued)

"Electronic Invoicing and Payments" presented to National Corporate Cash Managers Association, May 1988, Chicago, IL.

"Paperless Office" presented to the Government Financial Managers Conference, April 1988, Baltimore, MD.

"EDI Standards" presented to the Association of Government Accountants, January 1988, St. Louis, MO.

"VA Paperless Environment" presented to the Leadership VA Seminar, August 1987, Philadelphia, PA.

"Paperless Business Cycle" presented to the Association of Government Accountants Professional Development Conference, June 1987, New Orleans, LA.

**PROFESSIONAL
AFFILIATIONS**

Board of Directors, Data Interchange Standards Association, Inc.

Executive Committee and Chair, Government Subcommittee of American National Standards Institute Accredited Standards Committee X12.

Delegate, North American EDIFACT Board.

Member, Association of Government Accountants.

Member, Data Processing Managers Association.

Range of experience

Mr. Hogeboom is a data processing specialist with over eleven years of experience in management, analysis, design, development, conversion and re-engineering of financial and management information systems. His industry experience includes work for many federal and state government clients as well as engineering and real estate development firms in the commercial sector. He is experienced in the application of CASE technology for software conversion and re-engineering. He is proficient in COBOL, BASIC, 4 GLs, data base management systems and various software packages. His hardware experience includes: IBM 30XX, 370, 43XX, UNIVAC 1100 Series, WANG VS, Hewlett Packard 3000 Series, DEC 10, 20; and various microcomputers.

Education

B.A., Botany, Minor Chemistry, University of Northern Colorado, 1976
A.A., General Studies, Montgomery College, 1974

Professional and business history

Price Waterhouse: Senior Manager, July 1988 to present, Manager, July 1985 to June 1988, Senior Consultant, August 1983 to July 1985

Oxford Development Corporation: Data Processing Manager, February 1983 to August 1983

EG and G Intertech: Senior Systems Analyst, October 1982 to February 1983

Simcon, Inc.: Analyst/Programmer, April 1979 to October 1982

Wiss Janney Elstner, Inc.: Programmer, June 1977 to July 1978

Professional and business experience

State of Washington, Department of Social and Health Services (DSHS) --Cost Allocation System (CAS) Conversion (UNIVAC to IBM)
Project Manager 6/90 to 11/90

The DSHS CAS provides the mechanism for accumulating and allocating DSHS financial events which occur in the state's financial management system. The objective of the system is to achieve equitable, accurate and auditable allocation of cost to federal and state programs supporting federal funding.

Relevant professional and business experience (continued)

As project manager, Mr. Hogeboom was responsible for all aspects of the conversion project lifecycle. The project phases included conversion assessment, analysis, redesign, software and data conversion, and system and acceptance testing. The system conversion was performed on Price Waterhouse's IBM equipment at our National Administrative Center and migrated to the State of Washington AMDAHL computer.

Integration with the State of Washington's AMDAHL based financial systems is currently underway.

Technical Environment: IBM 3090 MVS/XA, VSAM; AMDAHL MVS/XA, VSAM; UNIVAC 1100 OS 1100; COBOL, ISPF, IPF, ARRAE, LTI RECODER and INSPECTOR, McCabe ACT, TestPaths

U.S. Department of Housing and Urban Development (HUD), Office of Finance and Accounting (OFA)--Auditability Implementation Project
Project Manager, 12/89 to 6/90

OFA is responsible for administering the financial management and reporting for approximately forty HUD programs, including Community Development Block Grants, Housing Assistance Payments and HUD Salaries and Expenses. The OFA financial systems environment consists of numerous subsystems developed in COBOL, MAPPER, and DBASE III running on UNIVAC, Honeywell, and IBM compatible Pcs.

Mr. Hogeboom was responsible for managing the development of a strategic plan to assist HUD in achieving auditable status within the OFA financial management and reporting environment. The project covered OFA's ten largest programs and addressed known impediments to auditability in approximately fifteen accounting systems. The focus of the project was to achieve auditability in the near term by implementing procedural and control improvements. The emphasis of the long range plan was to sustain auditability through the consolidation and modernization of the accounting systems. HUD is currently in the process of implementing the recommendations.

Technical Environment: UNIVAC 1100, DMS 1100, COBOL, MAPPER; Honeywell 6000, COBOL, IBM PC, DOS, DBASE III

Relevant professional and business experience (continued)

U.S. Department of Defense, Defense Security Assistance Agency (DSAA)--
Accounting System Compliance Test (7/89 to 11/89)

The DSAA Accounting System (DAS) performs the accounting and credit management functions for the Financial Reports and Credit Program division of the DSAA. The system was revised extensively to support the Department of Defense Standard General Ledger. Price Waterhouse was engaged to develop a compliance test plan and conduct a compliance test of the DAS.

As System Test Manager, Mr. Hogeboom was responsible for conducting the compliance test. The test plan was designed to ensure compliance with the DoD Accounting requirements. The test followed an incremental approach, beginning with simple test cases and progressing to larger, more complex cases.

Technical Environment: IBM 3090, IDMS-R, OLQ, COBOL

U.S. Department of Commerce, International Trade Administration--Independent
Technical Review of the Commercial Information Management System (8/89 to
12/89)

The Commercial Information Management System (CIMS) is a world-wide distributed system whose objective is to facilitate collection and distribution of export promotion information. The CIMS is currently installed in 118 domestic and overseas locations.

As project manager Mr. Hogeboom was responsible for the day to day management of the engagement. His participation included project management and planning, providing technical assistance to the project team, reviewing key client deliverables and conducting formal client briefings.

Technical Environment: WANG VS and PC, DMS, COBOL; TOM SPEED II, Knowledgeman II

U.S. Customs Service (USCS)--Financial Management Systems Improvement Task
Force (1/89 to 7/89)

The Task Force objectives included definition of initiatives designed to bring

Relevant professional and business experience (continued)

USCS Financial Systems into compliance with the Federal Managers Financial Integrity Act (FMFLIA), and the Joint Financial Management Improvement Program (JFMIP) Core Requirements. Mr. Hogeboom was the senior Price Waterhouse representative on the Task Force. The specific tasks completed by the Price Waterhouse team included requirements definition and design for implementation of the U.S. Standard General Ledger, design of accounting controls and development of fixed asset accounting procedures.

Technical Environment: IBM MVS/XA, CICS, COBOL, DATACOM

U.S Department of State--Financial Management System Implementation Project
(6/88 to 12/88)

Mr. Hogeboom was the project manager for conversion, data migration, procedure development and training support activities on a financial management system package implementation for a the U.S. Department of State. He was responsible for the overall management and quality of the engagement. His duties included project management, review of key client deliverables, client consultations and technical support to the entire project team staff.

Technical Environment: IBM 3090 MVS/XA, VSAM, CICS, COBOL; AMS
Federal Financial System (FFS)

U.S. Department of State--Overseas Financial Management System (OFMS)
7/85 to 6/88

OFMS is a world wide financial management system developed and implemented by Price Waterhouse for the Department of State. OFMS provides integrated financial management for U.S. embassies, regional processing centers, serviced posts and domestic operations. The system's functions include budget execution, obligation control, vouchering/accounts payable, accounting interfaces, allotment accounting, disbursing, reimbursements and reference file maintenance.

During his tenure as project manager, Mr. Hogeboom managed and participated in the installation of system modules in more than fifteen countries. He was responsible for the overall quality of the installations, and provided both

Relevant professional and business experience (continued)

management and technical direction to client and project staff.

Prior to assuming project manager responsibilities, Mr. Hogeboom was the manager for the maintenance and enhancement of OFMS. His responsibilities included: managing the contract programming staff, tracking software installations and releases, and troubleshooting user problems.

Technical Environment: Wang VS, DMS, WANGNET, COBOL, CINCOM'S
TOTAL DBMS

TECHNICAL SUPPLEMENT

DATA
PROCESSING
EXPERIENCE

Mr. Hogeboom has over eleven years of data processing experience in all phases of the system development life cycle, with increasing levels of responsibility. System development experience includes: analysis, design, programming, conversion, re-engineering, implementation, maintenance and enhancement, configuration management, data base administration, and project management.

LANGUAGES

COBOL, BASIC, FOCUS, APL, T-ASK

HARDWARE

IBM: 30XX, 43XX, 370, PC
AMDAHL: 58XX Series
WANG: VS, PC
DEC: 10, 20
HP: 3000 Series II

OPERATING
SYSTEMS

IBM: MVS/XA, VM, DOS, VS, CMS, TSO, OS, PC DOS
WANG: DMS, PC DOS
DEC: TOPS 10
HP: MPE

SYSTEMS
SOFTWARE

VSAM, TOTAL, IDMS, DATACOM, FOCUS, FOCUS HLI, ADRS II, UTILITIES

APPLICATION
PACKAGES

ISPF, JCL, TSO, ARRAE, LTI RECODER and INSPECTOR, McCabe ACT and TestPaths, LOTUS 123; SuperProject, INQUIRY, REPORT, AMS FFS

CURRENT
SECURITY
CLEARANCE

Secret

PHILLIP W. MCLAUCHLIN

POSITION	Senior Manager, Price Waterhouse Electronic Data Interchange (EDI) Development and Consulting.
PROFILE	<p>Mr. McLauchlin has over nineteen years of experience in Management Information Systems (MIS). His MIS background consists of systems analysis, programming, operations, instructing, data communications, management and consulting. Since 1983 he has been heavily involved in providing Electronic Data Interchange (EDI) services throughout North America to major national and international organizations representing transportation, chemical, retail, banking, electronics, automotive and government. Responsibilities have included cost-benefit analysis, design, development, training, implementation and management of EDI systems and translation software products in both user host and network host environments. He currently serves as an active member of the American National Standards Institute (ANSI) X12 committee to include secretary of Technical Assessment/B Subcommittee, and chairman of the Electronic Form and the Control Structure task groups. He also served as consultant to the U.N., Geneva for developing the UN/EDIFACT Secretariat data base.</p>
EDUCATION	<p>Bachelor of Business Administration Economics and Management Information Systems Georgia State University</p> <p>U.S. Army Automatic Data Processing Plans and Operations, Fort Benjamin Harrison, Indiana</p> <p>US Army Command and General Staff College, Fort Leavenworth, Kansas</p>
PROFESSIONAL EXPERIENCE	<p>Price Waterhouse: Senior Manager, 1989 to Present - Manager, 1988</p> <p>Transsettlements Inc.: Director, Consulting Services 1988 Director, Systems and Services 1986-1987 Manager, Systems and Services 1982-1985.</p> <p>RTC Trucking Company: Systems Analyst, 1981 -1982</p>

PROFESSIONAL
EXPERIENCE
(continued)

Watkins Associated Industries:
Project Leader and Programmer/Analyst, 1978 -1981

Army and Air Force Exchange Service:
Computer Operator UA9/UA8 1975 - 1977

United States Army:
Lieutenant, Adjutant General Corps, 1972 - 1974

TECHNICAL
EXPERIENCE

EDI Consulting and Implementation

Project Manager for Implementation of EDI System for material releases and ASN's using automotive industry standards. Implemented Trinary product on VAX computer to interface to MRP system. Provided maintainable documentation for operations and user procedures on IBM PC using Windows and Corel Draw software. Established EDI trading relationships for major Dana Corporation-Parish Division customers.

Performed detailed software evaluation of EDI Mainframe products for a Fortune 100 company. The evaluation provided company requirements, vendor questionnaires, hands on demonstrations, selection criteria, product comparison analysis and a best fit recommendation. Report will serve as a basis for EDI software selection at the corporate office and subsidiaries worldwide.

Designed and implemented the upgrade of a proprietary EDI system at a Fortune 100 company. The conversion involved over 1200 Trading Partner Relationships, 30 internal departments, data links to all the major Value Added Networks and several data links for point to point connections. The system provided a centralized corporate EDI system with improved Value Added Services, better management reporting/on-line Administration, improved audit trails for tracking system activity and more automated control of day to day operations by providing operator alert messages for exception processing. Products used were the Sterling MetroMark mainframe translation software and SuperTracs communications package.

TECHNICAL
EXPERIENCE
(continued)

Currently designing systems and software for a Fortune 100 Corporation which will allow event driven EDI exchange capability to trading partners on a domestic basis using UN/EDIFACT and ANSI X12 standards.

Conducted EDI cost benefit studies at Dupont and Cummins Engine which demonstrated how EDI can reduce costs within an organization for doing business with customer, suppliers, distributors and intra-company. Project involved development of an automated formal Cost Benefit report, an analysis technique and an EDI cost benefit calculator using Windows and Lotus 1-2-3. This provided a framework for corporate management to quantify cost savings and perform "what if" analysis.

Consultant to the United Nations, Geneva for developing the requirements definition, conceptual design, system architecture and a prototype system for the UN/EDIFACT secretariat data base. System design and prototype system using PC-Oracle provided support for maintenance administration, exchange of information among rapporteur data bases, data base reporting, and query capabilities.

Managed consulting projects to eliminate paper and implement EDI for freight bill (motor, air and rail), invoice (ANSI and UCS), bill of lading, purchase order, purchase acknowledgement, remittance advice (electronic funds transfer), functional acknowledgement and other EDI transactions for over thirty Fortune 1000 organizations representing transportation, chemical, retail, banking, electronics, automotive, telecommunication and government industries.

- Conducted strategy and planning meetings with financial managers, MIS managers, programmer/analysts and data communication specialists to design the architecture, migration and operational implementation of EDI with existing computer application systems. This included its impact on existing business procedures, audit trail/backup, industry specifications and requirements necessary to control paperless transactions.
- Managed the design, development, programming and

implementation of EDI projects.

- Conducted seminars to increase awareness of general systems functions required to implement EDI.
- Wrote specifications for mapping client's application data for freight bills, invoices, purchase orders, etcetera to and from National EDI Standards.
- Provided trouble shooting support for data communication networks used to transmit EDI data.

Assisted a major national bank in development of Electronic Funds Transfer (EFT) specifications and software to convert National Automated Clearing House Association (NACHA) data formats for CTP, CTX, CCD and CCD+ to and from ANSI X12 transaction set 820.

Chairman of ANSI X12 task group to develop an electronic form for exchanging EDI version/release standards between trading partners which would be used to produce documentation and/or table drive EDI software for compliance to ANSI, industry or specific trading partners' requirements.

Managed the design, development and programming of mainframe EDI software products for a major EDI software provider. Software supported ANSI, TDCC, AIAG, UCS, WINS and other national EDI standards on mainframe IBM, Burroughs, Honeywell, Sperry, and DEC equipment.

Provided system specification for a third party value added network (VAN) to support EDI data transmissions.

OTHER SYSTEMS EXPERIENCE

Instructor for six week COBOL programming course on IBM 3081 OS/MVS computer involving Price Waterhouse System Management Methodology (SMM) for system design, top down structure charts, program logic, tables logic, sequential/random file processing and system/unit testing. Students designed, programmed and tested five COBOL programs using SMM, OS/MVS JCL, TSO and VSAM. Managed an automated payment system for funds transfer

of monies between ten trading partners. System consisted of settling accounts payable transactions matched to accounts receivable transactions.

Team member on government project team for developing a Request for Proposal for a local area network (LAN) servicing sixty-four work stations. Specifications included hardware, software, security features, operations environment, system design and maintenance requirements.

Managed a project to develop and implement an on-line contractor settlement system to allow owner/operator truck drivers to be paid and a statement produced at their designated terminal within twenty-four hours after acknowledgement of delivery is received. This included an on-line system to gather fuel purchases and cash advances in a timely manner to support the contractor settlement system 24-hour turn around.

Project leader for installing and implementing Management Science America (MSA) financial system software products for the general ledger, budget and custom reporting systems. This involved working directly with twenty-three different company/subsidiaries to convert from existing computer systems and manual systems in three states to centralized and standardized financial systems using MSA products. Industries consisted of construction, transportation, real estate and insurance.

Project leader responsible for the MSA human resource systems installation and maintenance. Tasks consisted of supervision of one programmer/analyst to maintain the payroll/personnel systems for eight companies and working directly with payroll and personnel departments to solve any problems, questions and change requests.

Project leader for development of conversion procedures to migrate from an IBM/DOS to an IBM/OS environment. This consisted of supervising four programmer/analysts assigned to the project and coordinating the converting, paralleling and acceptance criteria of 300 RPG and COBOL/DOS programs to COBOL/OS programs.

Project team member responsible for writing the implementation phase of a project control procedures manual for a computer service bureau environment.

Supervisor of computer operations with responsibility for five employees assigned to the shift, scheduling world-wide I/O products, performing recovery/restart procedures to correct jobs that processed abnormally and assisting in trouble-shooting data communication problems.

Instructor for U.S. Army personnel systems. Tasks involved writing and presenting a twenty hour class of instruction on computer personnel accounting at company clerk through battalion commander levels.

Project officer for designing, programming and implementing a real time system for assignment, termination and maintenance of a housing complex for 5000 families.

Project leader for developing procedures to convert personnel systems in a seven state area to one standard personnel system for 40,000 U.S. Army personnel. Project was accomplished with less than 6% rejection of data loaded.

ADDITIONAL EXPERIENCE

U.S. Government, Top Secret Security Validation - October 1985.

Seventeen years active U.S. Army Reserve service with a rank of Major in the Adjutant General Corps.

TECHNICAL BACKGROUND

Software experience with COBOL, BASIC, ASSEMBLER, FORTRAN, ALGOL and CPG-COBOL CICS/VSAM.

Hardware experience on IBM OS-MVS/DOS/VSE, Sperry, Burroughs and Honeywell mainframe equipment.

Application software experience with Management Science America (MSA) financial and human resource systems, and TransSettlements Inc. TRANSLATE, TRANSEND, TSI International and Sterling Translator*MVS systems.

Data communication experience with IBM 2780/3780 ASYNC protocols; and Sterling Supertracs software.

IBM PC software experience with MS-DOS, dBase IV, Word Perfect, LOTUS 1-2-3, DAVE, ALLWAYS, Multimate, SMART COM, and CROSSTALK.

Macintosh experience with MicroSoft Word and MacDraw II

**PUBLICATIONS
& SPEECHES**

"Converting Documents to Transaction Sets" presented concepts and considerations to the American Trucking Association (ATA) workshops for EDI, October 1988.

**PROFESSIONAL
AFFILIATIONS**

American National Standards Institute, Accredited Standards Committee X12

American Trucking Association, Management Systems Committee

Reserve Officers Association of the United States

Armed Forces Communications and Electronics Association

POSITION Senior Manager, Price Waterhouse Electronic Data Interchange (EDI) Consulting Group, Dallas, Texas

PROFILE Mr. Moo has a diverse background in mainframe and telecommunications expertise. He has been involved with EDI since 1985 and has contributed significantly to the creation of one of the most advanced EDI installations in the world today. He has system design level experience in the areas of front-end EDI communications processors and standards translation techniques. Mr. Moo has been a consistent contributor in the EDI standards making arena. He is actively involved in the American National Standards Institute, Accredited Standards Committee X12 (ANSI ASC X12) and participates in the deliberations of the ASC X12 "C" Subcommittee on Communications and Controls. He has authored several papers on standard syntax and, as past chairman of the International Syntax Liaison Standing Task Group (TG6) under ASC X12C, he served as a delegate member of the North American EDIFACT Board (NAEB) and was responsible for a detailed comparison of the ANSI X12 standard and the international EDI standard, Electronic Data Interchange for Administration, Commerce, and Transport (EDIFACT). Mr. Moo served as co-chairman of the EDIFACT Syntax Development Group (SDG) of the Joint Rapporteurs' Team (JRT) which operates under the auspices of the United Nations Economic Commission for Europe, Working Party 4 on trade facilitation (UN/ECE/WP4). The charter of the SDG is to undertake a full review of the international standard for the EDIFACT syntax, ISO 9735. Mr. Moo has also appeared as an invited speaker on the subject of EDI during the Data Interchange Standards Association (DISA) Technical Exhibit and Seminar and the Electronic Data Interchange Association (EDIA) Annual Seminar. Mr. Moo's telecommunications background led to an invitation by the CCITT Special Rapporteur for X.400 and EDI to participate in the work of defining an X.400 content type suitable for the transmission of EDI data and he contributed a paper on EDI Information Object Architecture to that effort.

EDUCATION B.B.A. Systems Analysis and Finance Summa Cum Laude
University of Texas, Arlington

**PROFESSIONAL
EXPERIENCE** Price Waterhouse:
Senior Manager 1990 - present
Manager 1989-1990

**PROFESSIONAL
EXPERIENCE**
(continued)

Texas Instruments:
Manager, EDI Services 1987-1988
Manager, EDI/Supplier Communications 1985-1987
Manager, Mainframe Technical Support 1983-1985
Programmer/Analyst 1981-1983

**TECHNICAL
EXPERIENCE**

EDI Consulting and Implementation

Managing data mapping requirements and transaction design effort for a division of a Fortune 50 telecommunication provider. The effort will support the development of a leasing and capital management system.

Provided technical advice to a leading international network services organization in the area of designing and developing EDI related products.

Managed the evaluation of the audit and control features supported in the EDI program product developed by a major hardware/software vendor.

Evaluated several UNIX based EDI translation software products for a major manufacturer of computer hardware. Examined market segments where EDI might be expected to reside on UNIX platforms.

Reviewed strategic EDI gateway communication planning for a Fortune 200 health care corporation.

Managed an extensive EDI Control Review for an international chemical and pharmaceutical manufacturer.

Provided technical details on uses of the X.400 communication standard and reviewed strategic network expansion planning for a Fortune 200 manufacturer of diesel engines.

Conducted a training seminar on risks and controls in the EDI environment for the internal audit staff of a Fortune 50 oil and gas producer.

**TECHNICAL
EXPERIENCE**
(continued)

Co-Chaired the EDIFACT Syntax Development Group (SDG) assigned to review the international EDI syntax standard, ISO 9735.

The Western Europe, and Eastern Europe. The SDG is chartered under the Joint EDI Rapporteurs' Teams, Group of Experts 1, Working Party 4 on Trade Facilitation of the United Nations' Economic Commission for Europe (UN/ECE/WP4/GE1) and has been assigned the task of undertaking a full technical review of the EDIFACT syntax rules approved in 1987 through the International Standards Organization (ISO).

Participated in the work of the Consultative Committee on International Telegraphy and Telephony (CCITT) Rapporteur's Group on X.400 and EDI. The group developed an X.400 content type to exchange EDI specific data.

Conducted an EDI Controls Review for a Fortune 50 manufacturer of chemical products. The review was designed to analyze controls on the existing EDI environment for accuracy and sufficiency. Recommendations for improving the control structure were also developed.

Provided technical assistance to Texaco on automating its internal computer equipment leasing business. The project incorporated EDI connections to major lessors and equipment suppliers and provides a data base of leasing information for internal users.

Conducted a review of EDI implementations for an aircraft engine manufacturing division of a Fortune 50 company. Investigated audit and security controls in place and made recommendations on improving the established EDI environment.

Conducted a review of EDI implementations for a major manufacturer of pet foods and products. Made recommendations for assimilation of EDI in corporate business plan and reviewed controls placed on the existing EDI environment.

Provided a West Coast firm, involved in two way communications between freight carriers and their truck cabs, with a technical evaluation of encryption and authentication capabilities. The evaluation also included a business scenario to demonstrate the

TECHNICAL

EXPERIENCE
(continued)

potential use of authentication in conjunction with X12 and TDCC EDI formats to provide accurate Bills of Lading and Freight Bills.

Managed an EDI Controls Review for a major dry goods manufacturer selling to the grocery and mass merchandizing segment. Performed an extensive investigation of EDI programs in the firm's three operating companies. Developed recommendations for consolidation of EDI activity and tightened security and controls on the existing environment.

Defined requirement specifications for a major international Value Added Network (VAN) to implement the transport of interchanges which use the ANSI ASC X12 defined ISA/IEA interchange header and trailer segments.

Participated in developing the initial U.S. technical position to the International Standards Organization, Joint Technical Committee 1, Special Working Group on EDI (ISO/JTC1/SWG-EDI).

Coordinated the development, through TG6 of ASC X12C, of an ANSI ASC X12 position on syntax migration toward the EDIFACT international standard. The full ANSI ASC X12 community approved the recommendations included in the X12 - ISO 9735 Comparison and Recommendations paper by letter ballot in November, 1988.

Contributed to the effort to correct errata in the ANSI ASC X12.6 syntax standard. The standard was simultaneously extended to provide a full set of syntax rules for: sub-elements; rules for the interchange of binary formatted data, such as CAD/CAM or bit mapped graphics; and the expression of data element conditionality.

Managed a technical support staff in providing communications and translation tools to a highly developed EDI coordinating function. Staff maintained and enhanced a leading edge communications front-end designed for the exchange of data between trading partners on a continuous operations basis. Communication tools were kept available at all times and were accessible by real time, on-line transaction driven requests, user and production batch initiation, and trading partner call initiation.

**TECHNICAL
EXPERIENCE***(continued)*

Trading partner initiation allowed automatic start of production processing cycle. Full logging and audit trail records were produced and archived. System capabilities included multiple send/receive functions to the same trading partner between production cycles. Support was provided for direct data links between partners through dedicated circuits, switched circuits, or store-and-forward via Value Added Networks.

Maintained corporate liaison with third party network providers on-line network service providers. Provided internal account management of Value Added Network (VAN) store-and-forward "mailboxes". Provided a single point of contact for internal users requiring VAN or on-line services.

Coordinated corporate technical positions before appropriate standards bodies and industry associations. Developed and defended business defined requirements of the EDI environment in standards arenas. Participated in the Electronics Industry Data Exchange (EIDX) which is responsible for developing conventions and guidelines for the use of EDI between Electronics OEMs, distributors, and suppliers. Participated in the Telecommunications Industry Forum (TCIF) which serves the same basic function for regional and local telephone companies and their suppliers and corporate customers.

Developed and implemented the worldwide EDI communications strategy for a Fortune 100 company. Developed and installed a mainframe based communications processor fully integrated to the firm's existing production and user environment. Designed internal/external security procedures to preclude unauthorized access and minimize the impact of mimicry or fraudulent access. Designed internal store-and-forward capability that allowed the firm to act as a pseudo-VAN for its trading partners. Trading partners had the option of direct telecommunication access to send or receive data 24 hours a day, 7 days a week. Internal users could use the system to queue several days of data, either in-bound or out-bound, between production runs. System could be directed to notify the existing production environment scheduler that a data transfer had been completed and that additional processing could be continued or commenced.

**TECHNICAL
EXPERIENCE**
(continued)

Evaluated, selected, and installed EDI translation software. Integrated purchased translation package to the firm's existing production scheduling environment. Provided continuing evaluation of translation needs versus capacity of existing software. Developed requirements specification and system architectural design of next generation translation processor.

Other Systems Experience

Managed staff of internal mainframe consultants serving as liaison between application programming staff and system programming staff. Provided technical assistance to application programmers in the areas of MVS/XA, MVS/SP, JES3, OS/JCL, IMS DB/DC, TSO

ISPF-E/PDF, use of IBM and in-house system utilities, and all installed vendor products. Trained staff members to read OS formatted dumps to isolate user or system problems and recommend proper corrective action. Directed each staff member into an area of specialization and reduced department response time by a factor of 6.

Developed system utilities using ISPF Dialog Manager and IMS DC. Designed and installed a LIBRARIAN library member access and manipulation processor in the ISPF environment that superseded the capabilities provided by the vendor. Automated department functions which allowed a 17% reduction of staff during a period when demand increased by 300%.

Designed an automated procedure for installation and testing of JCL streams in a worldwide controlled production environment. The JCL was "beautified" for readability, checked for proper resource usage limits, and passed to the converter/interpreter. Results from the C/I were processed and JOBS which failed for JCL errors or missing disk data sets were not moved to the production environment. JCL to be run on remote CPUs was automatically routed to the proper installation for C/I testing and results were returned to complete the testing process. JCL error rates in production were reduced to a parts per million measurement rating for quality reporting and 4 exempt staff were reassigned from the department which had previously checked JCL visually.

**TECHNICAL
BACKGROUND**

Software programming experience with COBOL, COBOL-II, 8086 Assembler, 370 Assembler, C, BASIC, TSO Command Language (Clist), ISPF/PDF Dialog Manager (ISPLINK), ROSCOE, HP-PCL

Hardware experience with IBM 370-155, 4381, 3033, 308x, 3090, PCs

Operating system experience with OS/MFT, OS/MVS, MVS/SP, MVS/XA, TSO ISPF-E/PDF, JES3, HASP, VTAM, IMS DB/DC, ROSCOE, PC-DOS

Utility/program product experience with IBM OS/370 Utilities, LIBRARIAN, ANSWER/2, XPEDITER, DYL/280, DL1, MFS, BTS, BDT, WordPerfect 5.0, LOTUS 1-2-3, SAMNA, CROSSTALK

**PUBLICATIONS
AND SPEECHES**

EDI Strategic Advantage or Competitive Necessity, speech presented to the Digital Equipment Corporation client seminar on EDI, February 1991

Audit Concerns of EDI, speech presented at the Pfizer Inc. Corporate Internal Audit Seminar, November 1990

Audit Concerns of EDI, speech presented to the EDI Forum management council of CIBA-GEIGY, November 1990

Audit Concerns of EDI, speech presented to the Pharmaceutical Manufacturers Association Internal Auditors Sub-Committee, September 1990

Audit Concerns of EDI, speech presented to the Lehigh Valley Chapter of the Institute of Internal Auditors, Inc., March 1990

Audit Concerns of EDI, speech presented to the Chemical Industry Data Exchange, February 1990

Audit and Legal Concerns of EDI, speech presented during the first Data Interchange Standards Association (DISA) seminar on Legal, Audit, and Security issues of EDI, February 1990.

**PUBLICATIONS
AND SPEECHES**
(continued)

Audit Implications of EDI, seminar presented to internal audit staff of Atlantic Richfield Oil and Gas Company, January 1990

Managing with EDI, speech delivered at Pansophic Application Software's International User Conference, August 1989.

EDI - What Is It?, speech delivered to National Cash Register Corporation Seminar on EDI, July 1989.

Government Participation in EDI, speech presented at General Electric Information Services User Group Conference, March 1989

Audit Concerns of EDI, speech presented during the Electronic Data Interchange Association's (EDIA) 20th Annual Technical Exhibit and Seminar, December 1988.

EDI Information Object Architecture, technical contribution to the Interim Rapporteur Group on EDI and X.400, November 7, 1988.

X12 - ISO 9735 Syntax Comparison and Recommendations, technical contribution to ANSI ASC X12, August 26, 1988.

Definition of Composite Data Structure, technical contribution to ANSI ASC X12, August 22, 1988.

Definition of Precision Data Element Type for Non-Decimal Quantities, technical contribution to ANSI ASC X12, June 2, 1988.

Definition of Data Element Relationships within a Segment, technical contribution to ANSI ASC X12, May 10, 1988.

Data Communications for EDI, speech presented during the Data Interchange Standards Association (DISA) 1st Annual X12 Technical Exhibit and Seminar, April 1988.

**PROFESSIONAL
AFFILIATIONS**

Listed in South and Southwest edition of Who's Who in America

American National Standards Institute, Accredited Standards Committee X12 (ANSI ASC X12), Subcommittee C

**PROFESSIONAL
AFFILIATIONS**
(continued)

Consultative Committee on International Telephony and
Telegraphy (CCITT) Special Rapporteur's Group on X.400 and
EDI

North American EDIFACT Board (NAEB)

EDIFACT Syntax Development Group (SDG)

International Standards Organization, United States Technical
Advisory Group 154 (ISO TAG/154)

Range of experience

Qualifications include microeconomic analysis in regulated industries, international economics, econometric modelling, demand and tariff analysis. Expertise in numerous statistical and financial computer application programs.

Education

Ph.D. Iowa State University Economics with minor in Statistics

BS Iowa State University, Engineering Operations with specialty in Aeronautics

Professional and business history

Price Waterhouse: Management Science and Economics Group, Washington, DC., Manager, 1987 to present.

INTELSAT Organization, Business Planning & Analysis Department, Washington, DC., Senior Business Planning Analyst, 1986 to 1987.

AT&T International, Inc., The Management & Technical Advisory Services Department, Basking Ridge, NJ., Economic Consultant, 1983 to 1985.

AT&T The Long Lines Department, Overseas Department, Morris Plains, NJ. Economist. 1979 to 1983.

Communications Satellite Corporation, The International Operations Division, Washington DC., Financial Analyst, 1977 to 1979.

Relevant professional and business experience

Tariff Design and Implementation Plan for the Kenya Post & Telephone Corporation. Developed and lead the implementation process to design and present to management a tariff restructure plan for telecommunication services offered by KP&TC. The tariff restructure plan was formulated by integrating the recommendations of incremental cost analysis methodologies and objectives to meet government stipulate financial earnings requirements. The tariff design and implementation activities were conducted through a training program with KP&TC staff to provide them with the capabilities to review and update the financial earnings requirements, incremental costs analysis and implement new tariff adjustments on a periodic basis.

Relevant professional and business experience (continued)

Revenue Forecasting Design Study for Federal Telecommunications System FTS 2000. Project leader for a study to recommend an approach to develop an automated quarterly revenue forecasting system to permit the US General Services Administration to provide advanced billing to agencies for all services utilized under FTS 2000.

Privatization and Regulatory Reform Study for The Anchorage Telephone Utility. Principal analyst for a project to evaluate the desirability and recommend a course of action to privatize and to institute regulatory reform policies on the Anchorage public utilities including the Anchorage Telephone Utility. The study included a review of utility operations and strategic plan plus an identification of key regulatory and privatization issues and their impact on the utility. An economic cost benefit analysis was performed to determine the impact of privatization on the local economy. A financial valuation analysis using a discounted cash flow methodology was developed to estimate the expected value of the utility to private investors.

Tariff Study for The Jamaica Telephone Company. Principal analyst on a contract in Jamaica to study and propose a cost based tariff structure for the Jamaica Telephone Company. Responsibilities include developing and using incremental cost analysis methodologies to evaluate the efficiency of existing tariff policies for all telecommunication services and the design of a new tariff structure that promotes improved resource allocation.

AT&T Communications Productivity Analysis Study. Performed project study to measure company's total factor productivity plus net income and productivity analysis. Developed enhancements to system that evaluates the impact on productivity from the different factors of production including capital in addition to the traditional labor productivity measure. Analysis used in the business financial plan to determine sources of contribution to corporate financial performance.

Traffic Forecasting and Rate Evaluation System for The Telecommunication Authority of Singapore. Headed an economic consulting project with Telecoms of Singapore to develop a traffic forecasting and tariff evaluation system of the Singapore international telecommunications market (20 major country destinations) for use in network, tariff, and financial planning. Activities included proposal development, contract sale, and 15 months in Singapore with client on

Relevant professional and business experience (continued)

project implementation. Work performed on UNIX operating system with the S data analysis application program to develop traffic database, econometric models with extensive regression diagnostics, a comprehensive

forecasting system, and a rate evaluation system to measure impacts of rate structure changes. Organized and presented a three month training program in economics and statistics to support system use.

Economic Planning & Research of AT&T's Overseas Telecommunications Services. Developed extensive econometric modelling and forecasting techniques to analyze AT&T's international telephone services. Estimated static and dynamic price elasticities of demand for access and usage of service from the USA to specific country locations. Traffic and revenue forecasts developed from simultaneous equations model to estimate traffic access, usage and the average revenue earnings. Results used in AT&T's financial planning and the coordinated network facility planning process with the foreign PTT partners.

Publications and reports

June 1987: Levenbach, Hans and Schultz, William, "Econometric Methods for Managerial Applications", In Spyros Makridakis (ed.), The Handbook of Forecasting: A Manager's Guide, 1987.

December 1986: Sixth International Conference Forecasting and Analysis for Business Planning in the Information Age. TOKYO, JAPAN. Co-author and presented paper on "Forecasting New Technologies For Decision Support Systems".

June 1983: Third International Symposium on Forecast PHILADELPHIA, PA. Presented paper on "Use of Generalized Transformation in Forecasting for an Econometric Model of International Telecommunications Demand"

November 1982: Schultz, W.R. and Triantis, J.E. "Pooled Regression Applied to International Telephone Demand", Telecommunication Journal, Vol. 49:11, November 1982, 777-81.

August 1982: American Statistical Association Meetings CINCINNATI, OH. Presented paper on "An International Telephone Demand Study Using Pooled

Publications and reports (continued)

Estimation Techniques".

June 1982: Fourth International Conference on Futures Analysis, Forecast Planning for Telecommunications, Energy and Public Utilities. PARIS, FRANCE. Presented paper on "An International Telephone Demand Study Using Pooled Time Series

Estimation Techniques".

January 1981: Pacific Telecommunications Conference HONOLULU, HI. Presented paper on "Empirical Study of US Demand for Message Telephone Service to the Pacific Region".

RANGE OF EXPERIENCE

Statistics, Computer Programming, Simulation, Logistics Analysis

EDUCATION

M.S., Applied Statistics, Villanova University

B.S., Mathematics, Ursinus College

EMPLOYMENT HISTORY

Price Waterhouse: Manager, 1989 to present. Senior Consultant, 1986 to 1989.

Arthur Young and Company: Senior Consultant, 1984 to 1986

Ketron Inc.: Logistics Analyst, 1980 to 1984

SELECTED EXPERIENCE

Food and Nutrition Service - Survey of WIC Participants and Farmers.

Survey Manager on an evaluation of the Food and Nutrition Service's Women, Infants and Children (WIC) Farmers' Market Coupon Demonstration Project. Under this program, nutritionally at risk women and children are provided coupons redeemable for fresh fruits and vegetables sold at participating Farmers' Markets. The study assesses the nutritional benefits and dietary changes of women and children participating in the program, as well as the financial benefits of the program for farmers. Findings are based on a survey of a random sample of 2,640 WIC participants and 400 farmers.

Farmers Home Administration - Credit Management Study.

Lead Statistical Analyst and Data Collection Manager on a credit management study of the Farmers Home Administration's (FmHA) farm loan programs. Mr. Thompson directed the development of a statistical credit screen model that will be used to evaluate the risk of farmer loan applications. The study included a sample survey of over 2,000 loan files.

Internal Revenue Service - Study of the Effect of Outliers on Estimates of Compliance

Mr. Thompson participated in a study of the effect of outliers in Taxpayer Compliance Measurement Program (TCMP) data files on estimates of compliance. Project activities include:

- Performing exploratory data analysis to determine the nature of the data
- Conducting a statistical simulation study to create a pseudo-population representing the TCMP data
- Selecting and testing alternative outlier identification and treatment procedures and recommending procedures which perform best on current TCMP estimates Implementation team leader of an engagement to develop and implement audit sampling procedures in the finance offices of a confidential government agency. This project consisted of 1) performing a cost/benefit analysis for implementing audit sampling procedures 2) designing a sampling plan, 3) instructing finance personnel on applying the audit sampling procedures and 4) monitoring the initial implementation.

General Services Administration - Sampling Plan

Mr. Thompson developed a prototype sampling plan that federal agencies can adopt to verify phone calls billed under the new federal long distance system (FTS-2000). The sampling plan was designed in accordance with GAO guidelines for audit sampling. Agencies can use the sampling plan to select a representative sample of call detail records (records of individual phone calls that are submitted with an invoice) to verify that billed calls were in fact made and were for official purposes.

Confidential Federal Agency - Audit Sampling Procedures

Mr. Thompson performed a review of the audit sampling procedures used in the travel office of a confidential government agency. This review included a review of the sampling methodology and the algorithms of the audit sampling software. Mr. Thompson also helped implement audit sampling procedures in Budget and Finance Offices.

National Petroleum Council - Survey of Domestic Refining Industry

Analyst/programmer on an engagement to administer a census of the domestic refining industry for the National Petroleum Council. Mr. Thompson helped develop an automated data base on a personal computer for the entry and storage of survey data. He also assisted in the development of SAS programs that compile census data and create reports.

Energy Information Administration - Statistical Support

Provided statistical support to the Energy Information Administration of the Department of Energy. Evaluated annual and monthly surveys of petroleum product sales for the Petroleum Marketing Division in the following tasks:

- Examined methods of measuring precision of price estimates and made recommendations for changes where appropriate. Several variance estimators were tested using simulation to determine a theoretically acceptable, more precise measure of variance.
- Conducted a study to determine the composition of price and volume estimates (eg. survey responses, estimation, imputation for survey nonresponses) and trends in the "data quality" over time.
- Participated in a review of the edit system for responses to a monthly survey. Review included a study of the effectiveness of the current edit procedures and an evaluation of proposed improvements to the procedures.

Department of Energy - Database Development in Support of Operations Review

Consultant on an engagement to build a data base for the Department of Energy's (DOE) printing activities in Oak Ridge, Tennessee. Mr. Thompson supervised the data collection of printing and duplication job orders at DOE and DOE contractor printing facilities in the Oak Ridge area.

Department of the Navy - Logistics Analysis

Analyst for the Naval Air Systems Command's (NAVAIR) Level of Repair Analysis (LORA) methodology. LORA is an optimization methodology developed by NAVAIR that makes economic comparisons of maintenance alternatives for a system and its repairable components. Mr. Thompson has written user's guides for the avionics and gas turbine engines LORA models. He was instructed Navy and contractor personnel in the use of these models and has consulted users in their application.

Analysis in a Readiness and Availability study of the Airborne Self Protection Jammer (ASPJ) using Monte Carlo simulation. ASPJ is an electronic jamming device proposed for use in Navy and Air Force tactical aircraft. ASPJ operations and its logistics system were simulated using GPSS programming language. Statistics accumulated on readiness and availability parameters and the resulting conclusions were published in a report to the ASPJ program, office in NAVAIR. Analyst for Life Cycle Cost (LCC) estimation for Navy aircraft and equipment. His responsibilities included methodology development, scientific programming of methodologies and application of LCC methodology for cost estimation. His estimates have been used by various NAVAIR program offices for decision making.

Fish and Wildlife Service - Survey of Recreational Boaters.

Team Leader on a nationwide survey to estimate motorboat fuel use by recreational boaters for the U.S. Fish and Wildlife Service. The purpose of this survey is to determine the percentage of Federal fuel excise taxes to be deposited in the Aquatics Resources Trust Fund. Mr. Thompson is leading the sample selection, and tabulation and statistical analysis tasks.

Internal Revenue Service - Study of the Effect of Taxpayer Assistance on Compliance

Mr. Thompson directed a study of the effect of IRS Taxpayer Assistance on Taxpayer compliance. Taxpayers with demographic characteristics similar to users of IRS Taxpayer Assistance were recruited to fill out hypothetical tax returns. Study participants were randomly assigned to study groups. Some of the taxpayers were assigned to study groups that could use IRS Taxpayer Assistance to prepare their hypothetical return, and some were assigned to a control group that had no assistance. The compliance of both groups on the hypothetical returns was compared to determine the affect of Taxpayer Assistance on compliance.

Department of Justice - Litigation Assistance

Project Director of a litigation assignment for the Department of Justice in Oglala Sioux Tribe vs. U.S.. Developing defense in suit by Indian tribe against the U.S. alleging mismanagement of Indian trust funds and the leasing of tribal lands for grazing and farming. Developing interrogatories and deposition questions critiquing damage study of plaintiff and preparing rebuttal damage study.

Department of Veterans Affairs - Review of Work Measurement System

Consultant on an engagement to review the Veterans Administration's Department of Veterans Benefits' (DVB) work measurement system. Mr. Thompson took part in a thorough review of the DVB's central office staff which included interviews with staff members and documentation review. The purpose of the review was to determine the effectiveness of the work measurement system in its current configuration. Changes to the work measurement system were recommended that will facilitate improvements of its effectiveness.

Department of Energy - Review of Manpower Planning System

Consultant on an engagement to review the Department of Energy's (DOE) Manpower Utilization Reporting System, (MURS) database. MURS is used by all DOE organizations to report manpower utilization and productivity data for use in budget preparation.

Department of the Air Force - Program Evaluation

Consultant on an evaluation of the maintenance concept of the TF 34 engine installed on the Air Force's A-10 aircraft. The TF 34 engine is one of the first in the Air Force to be maintained under the Reliability Centered Maintenance (RCM) concept which was developed by commercial airlines. The evaluation included a review of all pertinent maintenance regulations and directives and an on site evaluation of the maintenance practices (field and depot). The purpose of the evaluation was to determine if the Air Force had correctly interpreted the airlines' definition of RCM and had subsequently implemented RCM correctly.

OTHER

Computer software

FORTRAN, BASIC, COBOL, GPSS, SAS, SPSS

PROFESSIONAL AFFILIATION

American Statistical Association

SETH A. TWERY

POSITION	Manager, Management Consulting Services, Charlotte, North Carolina office.
EDUCATION	B.S., Mathematical Sciences, Computer Science option, University of North Carolina at Chapel Hill.
RANGE OF EXPERIENCE	Mr. Twery has more than eight years of information systems experience in the financial services industry. He has extensive analytical and technical expertise with many innovative approaches to product and service delivery. Specialties include large integrated system installation and conversion, credit cards and Electronic Funds Transfer (EFT).
PROFESSIONAL AND BUSINESS HISTORY	<p>Price Waterhouse: Manager, 1989 to date.</p> <p>Carmody & Company, Inc: 1987 to 1989.</p> <p>Independent Consultant: Information systems planning and development, 1985 to 1987.</p> <p>Home Federal Savings and Loan: Systems Analyst, 1984 to 1985.</p> <p>First National Bank of Atlanta: Senior Programmer, 1983 to 1984.</p>
PROFESSIONAL AND BUSINESS EXPERIENCE	<p><u>Strategy and Planning</u></p> <p>Development of a consumer lending strategic processing plan for a large midwestern bank. Upon completion of the plan, implemented recommendation to consolidate consumer credit processing from four internal and external sources to a single third party processor. This included:</p> <ul style="list-style-type: none">- Development of a Request for Proposal (RFP).- Determination of vendors qualified to receive an RFP.- Functional and financial proposal evaluations.- Vendor selection.- Technical and management conversion assistance. <p>Creation of a Business Plan for a start up EFT software firm which was used to secure venture capital funding. This plan incorporated product planning, market definition, competitor analysis and financial forecasts. Additionally, a six month period of ongoing marketing support was provided.</p> <p>Assisted in creating a requirements definition for an Electronic Draft Capture product to serve the fast food industry. Subsequently, developed a preferred technical configuration for the point-of-sale based upon service requirements.</p>

Performed a feasibility study for a formal customer service unit at a money center bank. Primary market research was used to analyze customer service categories and volumes throughout the bank. Upon recommendation to create a centralized customer service unit, provided assistance on the design of the group including staffing, voice response systems, problem management systems, procedures and workflows.

Managed a project responsible for a technical review and program audit of the Point-of-Sale services offered by a premier financial services firm. The project identified service strengths and deficiencies from both internal processing and merchant customer perspectives.

Performed valuation analyses for three regional EFT networks. These were based upon fixed assets such as systems and facilities, processing contracts, network logo awareness, strategic location and customer base. All three networks were successfully acquired within identified value ranges.

Expansion/Divestiture analysis of a national EFT processor and network. System capabilities, staff quality, market opportunities and corporate direction were the primary areas of focus.

Strategic processing plan and subsequent RFP development and vendor evaluation for a large midwestern EFT network. After an in-house processing approach using packaged software operated by a facilities manager was recommended, an RFP was created for distribution to qualified vendors. Functional and financial evaluations lead to the selection of a new system and facilities manager.

Lead the technical analysis of a branch distribution and configuration study for a money center bank. Based upon demographic, internal bank and market data four topics were addressed:

- Potential for new accounts in six core product groups.
- Mix of retail versus commercial customers.
- Development of regional asset and regional liability centers.
- Projection of transaction volumes that could be performed electronically and identification of potential electronic branch locations.

System Development and Implementation

Technical analyst and programmer for the installation of and conversion to the Hogan integrated banking software at four regional banks. Each location had varied CICS and IMS data base and data communication configurations as well as real time, memo update or memo post transaction environments.

Significant work was performed with TDA, DDA, LOC, CIS and RPM applications. Specific projects include:

- Interface with an IBM 4700 branch network operating Broadway & Seymour software.
- Development of a hierarchical customer relationship for lending products in CIS.
- Enhancement of LOC application to support stand-alone credit lines.
- Analysis and design of a combined statement system for Hogan and non-Hogan products.
- Modified security components of the Functional Processing System (FPS).
- Created and instructed introductory and technical classes for Hogan, specific applications and the Umbrella system.

Programmer on a project which developed Fastload, an efficient system for conversion of customer data to the Hogan Customer Information System (CIS). The system was packaged and is now marketed internationally by Innovative Systems Incorporated.

Managed in the selection of and implementation of an Other Real Estate Owned (OREO) management system for a large northeast regional institution. The database component was DOS based and was implemented on a 3Com Token Ring local area network and the accounting subsystem was installed in an OS/2 local area network.

Developed functional specifications for and led the design of the development of a new proprietary EFT switching software system. The system was developed for a premier financial services organization entering the EFT third party servicing market.

Market Research

Developed and conducted multiple member satisfaction surveys for a national bank card association. The annual surveys were used for the allocation and prioritization of system development efforts.

Developed and marketed two syndicated studies for the payment systems industry. The studies were used as market analysis and planning guides by many leading financial service organizations.

- Trendline was a consumer research study on EFT in the Northeast. Topics covered were debit card usage, security, POS, network recognition and others.
- The ATM and POS Processing Market Survey profiled leading third party providers of ATM and POS services. Each profile included corporate history, marketing approaches, operating capabilities and product offering.
- In addition, conducted generic Payment System research in the retail and food industries.

NICOLE V. WILLENZ

POSITION Senior Manager, Price Waterhouse Electronic Data Interchange (EDI) Consulting Group, Chicago, Illinois

PROFILE Ms. Willenz is a specialist in EDI systems planning, standards development, and related consulting services. She served as the North American Rapporteur to the United Nations on The Working Party for International Trade procedures and Facilitation (1988-1991). She is also the former Chairman of the ANSI ASC-X12 International Project Team. She is a frequent and internationally recognized speaker before industry standards development groups and international trade communities on automation topics. She has nine years of experience in EDI standards development and information technology applications in business, trade, and manufacturing. She is skilled in the fields of software development and implementation, project management, and strategic planning.

EDUCATION B.A., Economics
Boston University

PROFESSIONAL HISTORY Price Waterhouse:
Senior Manager, 1989 - present
Manager, 1988-1989.

First National Bank of Chicago, Comtrac
Director of EDI Products and Services, 1987
Information Systems

National Industrial Transportation League:
Director of Computer and Systems Development, 1983-1986;
Director of Program Services, 1982-1983.

World Council of Credit Unions
Assistant to the Director of Communications, 1981-1982

U.S. House of Representatives
Legislative Assistant, 1980-1981

**TECHNICAL
EXPERIENCE**

Project manager for major food manufacturer to assess current EDI environment and recommend new software. Project included evaluating current EDI implementation, potential impact of added applications and development of a migration plan for new software. Project also included conducting a stakeholder analysis to initiate development of a corporate strategic vision.

EDI/EFT expert to project for federal agency study on proof of payment methodology and the potential impact of electronic funds transfer. Project included analysis of current proof of payment practices as well as existing payment methods.

Project manager for major tire manufacturer for evaluation of EDI purchasing initiatives. Project included analysis of current purchasing activities, impact of corporate EDI initiative and contribution of corporate EDI efforts.

Project manager for development of a corporate EDI training program. Project included developing slides and script within the context of an existing corporate "Quality and Manufacturing" training program.

Project team member for Fortune 100 chemical company to develop a cost/benefit PC tool. Project included developing formulas to reflect savings opportunities and project cost for EDI implementation.

Faculty member for private EDI and training institute sponsored by major corporations. Developed and instruct a training program on mapping the UN/EDIFACT standard. Project included developing slides, and instructor notes for one day session on history of the UN/EDIFACT movement, technical standards training and an overview of the standards development process and the global community.

Project manager for major steel manufacturer for implementation of EDI test report transactions and strategic planning. Project included evaluating current EDI implementation, assessing market conditions and opportunities with customers as well as integrating EDI into overall corporate strategic direction. Project also included development of customized CICS and management reporting software.

**TECHNICAL
EXPERIENCE**
(continued)

EDI expert team member for EDI feasibility study for aluminum recycling company. Project included impact assessment of EDI in response to customer requests, market analysis and implementation plan development.

Project manager for a Fortune 200 Healthcare EDI strategic planning study. Project included evaluating current EDI implementation, assessing future opportunities, recommending an organizational structure and budget as well as associating EDI with overall strategic direction of the corporation. In addition, a detailed cost/benefit analysis was initiated to identify cost and productivity opportunities.

Project manager for development of an expert system workstation for a large financial institution. Project included the development of an intelligent system to identify and choose appropriate product offerings for specific customer profiles; analysis of customer relationship and financial products sales cycle; and integration of current internal management systems.

Conducted a review of the impact of EDI implementation on the financial audit for a Fortune 100 chemical company. Project included evaluating current EDI installations for procedural control; adequate reconciliation to verify activities; impact of new users; and security of data as well as physical layout. Project involved the development of an EDI Audit Plan with specific review criteria based on exposure, financial and legal liability.

Project manager for development of an EDI master plan for a Fortune 500 manufacturing company. Project included the development of a corporate EDI policy and guidelines for its application; detailed analysis of the current information flow related to transactions for which EDI could be used; guidelines for cost/benefit analysis of the impact of EDI; preparation of an implementation plan for EDI projects, and an EDI presentation for internal use by corporate staff describing EDI policies, plans, and benefits.

Assisted in development of and conducted EDI training courses for Price Waterhouse staff.

**TECHNICAL
EXPERIENCE**
(continued)

Project manager for implementing an EDI Freight Payment System for a retail consortium. Project involved data requirements analysis, systems compatibility study, and development of database management procedures.

Project manager for a requirements survey for bills of lading and freight bills for a consumer goods manufacturer. Project involved detailed analysis of corporate information flow; data requirements, analysis of customer relationships and communications compatibility; and conceptual design of EDI data flow to both intracorporate and external customers and suppliers.

Project manager to implement EDI systems for government bills of lading for a federal government agency. project included establishing communication interfaces, development of a database, and auditing procedures.

Project manager for conducting a feasibility study and cost/benefit analysis for electronic freight payment production. Project included analysis of paper-based systems; review of dated systems applications; forecasting for new communications requirements; revising of job descriptions and customer relation impact analysis.

Served 1988-1991 as North American UN/EDIFACT Rapporteur representing the United States and Canada to the United Nations.

Past Chairperson of ANSI ASC X12 International Project Team, International Transportation Working Group and Transportation Project Team, contributor to establishing worldwide EDI Standard (UN/EDIFACT) and an international transport message.

Other Systems and Consulting Engagements

Conducted surveys of several LTL and specialized hauler motor carriers on EDI capabilities, systems design and customer relations.

**PUBLICATIONS
AND SPEECHES**

Author: "*The 1990s: The Decade of EDI as a Key Facilitator for the Global Economy*", Network, December 1989.

Author: "*1992 and EDI: A Head Start for U.S. Industry*", The 1990s: A Global Marketplace, November 1989.

**PUBLICATIONS
AND SPEECHES**
(continued)

Author: *"1989 Update on UN/EDIFACT Status from a North American Perspective"*, EDI Forum 1989.

Author: *"EDI: The Quiet Revolution"*, Price Waterhouse Review magazine, November 1988.

"UN/EDIFACT and The Global Insurance Community", December 1990; ACCORD EDI Conference; Newark New Jersey.

"UN/EDIFACT: Today's Situation", December 1990; EDIA '90; Washington, D.C.

"An Introduction to EDI", December 1990; Digital Applied Technology Center, St. Louis, Missouri.

"UN/EDIFACT: The North American Perspective", October 1990; SITPRO EDI '90; London, England.

"UN/EDIFACT: The International EDI Standard", October 1990; Texaco Worldwide Technology Conference; Houston Texas.

"The Impact of International Standards", July 1990; 2nd International EDI Users Congress; San Francisco.

"UN/ EDIFACT: The Global Community", May 1990; Seattle, Washington; VICS User Group Meeting.

"EDI and The Leasing Process", May 1990; EDI/EFT Conference, Chicago, Illinois.

UN/EDIFACT: An Update", April 1990; EDI '90, Las Vegas, Nevada.

"Impact of EDI on the Audit", February 1990; Cleveland Chapter, Institute of EDP Auditors; Cleveland, Ohio.

"The UN/EDIFACT Story", February 1990; National Council of Freight Forwarders and Customs Brokers Annual Meeting; Scottsdale, Arizona.

"The Costs and Benefits of EDI", February 1999; GEIS User Group, Orlando, Florida.

**PUBLICATIONS
AND SPEECHES**
(continued)

"UN/EDIFACT and the International Air Carrier Industry", January 1990; LATA UN/EDIFACT Seminar, San Antonio, Texas.

"UN/EDIFACT Story", January 1990; Truck Advisory Group meeting, Denver, Colorado.

"North American Experiences in EDI", November 1989; EDI '89 Paris, France.

"UN/EDIFACT in North America", November 1989; EDI '89, London, United Kingdom.

"UN/EDIFACT and 1992", November 1989; NITL Annual Meeting, San Diego, California.

"The UN/EDIFACT Story", October 1989; Freight USA Conference, Chicago, Illinois.

"International EDI and Electronic Mail Applications", October 1989; Annual E-Mail Association Conference, Chicago, Illinois.

"UN/EDIFACT, EDI and North America", August 1989, First International EDI Users Congress, Vancouver, Canada

"EDI and the Audit", presented at the 1989 EDI/EFT Annual Conference, Chicago, Illinois, June 1989.

"EDI: Vision of the Future", presented at The Principles of EDI, Chicago, Illinois, June 1989.

"EDI Implementation: Putting the EDI Puzzle Together" presented at EDI: The Competitive Advantage, Price Waterhouse sponsored seminar, June 1988.

"EDIFACT and North America", presented April 1989 at EDI '89 New Orleans, Louisiana.

"International EDI Developments", presented at EDI '88 and April 1988.

"Transportation and International EDI", presented at 1988 Connecticut Maritime Council Annual Meeting, March 1988.

**PUBLICATIONS
AND SPEECHES**
(continued)

Featured Speaker in seminars conducted by Westvaco Paper Co. on transportation EDI, and trade-related issues.

"Information Technology Developments in Transportation", Management Institute of the University of Wisconsin, March 1987.

"Electronic Data Interchange and The Transportation Industry: History and Today", presented to the United States Department of Defense, July 1986.

"Electronic Data Interchange: The Corporate Advantage", presented at Distribution/Computer Expo '86, May 1986 and Westvaco Paper Corporation, Annual Transportation IntraCorporate Seminar, June 1986.

"New Developments in Software for Electronic Data Interchange", paper prepared for Babson College, Conference on Computer Software Uses in Transportation and Logistics Management, June 1985.

"Helping Transportation Professionals Meet Today's Computer Challenges", presented at Distribution/Computer Expo '85, May 1985.

**PROFESSIONAL
AFFILIATIONS**

UN/EDIFACT Rapporteur for North American (US & Canada), 1988-1991

Delegate to United Nations Economic Commission of Europe Working Party on International Trade Facilitation and Procedures

Member of American National Standards Institute

Member of Chicago EDI Business Forum

Member of Automotive Industry Action Group

Member of Chicago Council on Foreign Relations

Former Member of The National Industrial Transportation League

Former Member of The Traffic Club of Chicago

Listed in "Who's Who of American Women"

CLASS III

Range of experience

Ms. Albanese has substantial management and technical experience in both traditional and advanced technologies. She has been a data center manager, a systems development manager, and a systems consultant. She has experience in large scale systems development, micro-based commercial software development employing advanced technologies.

Ms. Albanese has experience with the following hardware platforms, operating environments, and system development methodologies: IBM 308X, 309X, 43XX; MVS/XA, VM, TSO/ISPF, CMS, JCL, COBOL, IMS DB/DC, VASM; Sun 386i, Sun OS, Sun View, C++; IBM PC, MS-DOS, Microsoft Windows, Turbo C; Apple MacIntosh, Mac II; CD-ROM (high sierra), Delta Microsystems WORM, Matrox Imaging Boards; The Connection Machine (parallel processing); REI Optical Scanning Devices; Gane & Sarson, Yourdon.

Education

B.A., Mathematics/Business, Cedar Crest College, 1979, Summa Cum Laude

Professional and business history

Price Waterhouse: Manager, 1989 to present

Eidetic Knowledge Systems: Director, Technical Development, 1988 to 1989

Institute for Scientific Information: Senior Manager, Information Systems Services and Control, 1986 to 1988.

Peat, Marwick, Main & Company: Senior Consultant, 1984 to 1986, 1982 to 1983.

Campbell Soup Company: Marketing Manager, Fresh Produce, 1983 to 1984.

Bethlehem Steel Corporation: Senior Programmer, 1979 to 1982.

Relevant professional and business experience

Responsible for the creation and management of the commercial software development function within a start-up software company. Managed the design and development of a system for the collection and analysis of data for medical scientific studies in which data is primarily images. The software product was designed and implemented using a structured approach (Gane & Sarson) and built on a Sun Microsystems 386i work

Relevant professional and business experience (continued)

station using C++ , Sunview windowing software, and Sun OS (Unix). The software employed and object oriented paradigm for data management.

Responsible for the overall strategic direction and management of the Operations, Technical Services, and Advanced Technology departments of mid-sized (IBM 4341) data center. Significant accomplishments included the completion of a management review of the data center, establishment of an overall management/ technology plan for the data center, and an upgrade to current technology in the data center.

Managed the design, development and commercial release of a micro-based text retrieval system using CD-ROM. This award winning software product was developed using a structured methodology (Gane & Sarson), and was built in an MS-DOS environment using C, Microsoft Windows, and custom designed database manager.

Managed the participation as a beta test site for an optical scanning work station. This high speed optical scanning equipment also provided the capability for conversion of test images into machine readable format (ASCII).

Managed the design, development, and implementation of an integrated equipment management system for a large state department of transportation. The system was constructed in an MVS/XA environment using IMS DB/DC and COBOL. The structured methodologies employed were Gane & Sarson and HIPO.

Performed as technical consultant in the selection and installation of an integrated financial systems for a state court system. The system was installed in a PRIME environment.

Completed the development and installation of a formulas management system for a large consumer products manufacturer. The system was developed in an IBM 308X environment using CICS/VSAM and MANTIS.

Designed and programmed modules for an equipment replacement and fleet management system. The system was written in an MVS/XA environment using COBOL and IMS DB/DC.

MARIANNE L. ALBANESE
PAGE 3

Relevant professional and business experience (continued)

Designed and programmed modules for an actuarial system. The system was written in a VM/CMS environment using COBOL and IMS DB/DC.

Designed and programmed modules for an actuarial system. The system was written in a VM/CMS environment using COBOL and VSAM.

MICHAEL A. CORLEY

POSITION	Manager, Price Waterhouse Electronic Data Interchange (EDI) Consulting Group, Atlanta, Georgia
PROFILE	Mr. Corley has over twenty years of experience in systems development life cycle. His background consists of EDI consulting, systems implementation and management, executive information systems, and office automation. Mr. Corley has several years experience with large-scale multimillion dollar project management. Mr. Corley has over five years experience developing and implementing a synchronous communication systems designed to share information for a wide variety of business systems. Mr. Corley managed his first EDI project when he built an EDI-based Executive Information System for the United States Army linking 23 offices.
EDUCATION	B.S., Business Administration, Cameron University M.S., Computer Science, University of Oklahoma U.S. Army Command and General Staff College
PROFESSIONAL EXPERIENCE	Price Waterhouse Manager, 1990 - present Lieutenant Colonel, United States Army: Director, Information Services, 1989-1990 Executive Operations Manager, 1986-1989 Operations and Training Coordinator, 1985-1986 Director, Computer Operations, 1982-1985 Engineering Manager, 1980-1982 Automated Systems Project Coordinator, 1978-1980 Civil Engineering Construction Manager, 1971-1978
TECHNICAL EXPERIENCE	<u>EDI Consulting and Implementation</u> Designed and implemented ANSI X12 and proprietary fixed length EDI systems at a Fortune 100 company on a VAX 6210, 3210, and CLEO communications subsystem. The design included development of custom data transfer and interface programs between the Ask MANMAN manufacturing materials requirements planning application and the Trinary EDI Windows translator product. The implementation provided day-to-day operations and control procedures, data archive for audit and retransmission, recovery processing procedures, communications, and complete user documentation.

**TECHNICAL
EXPERIENCE**
(continued)

Systems Implementation and Management

Identified requirements for a multimillion dollar research and development program to build portable remote computer terminals. Prepared requests for proposal, statements of work, and life cycle management models. Acted as liaison between the developer and sponsoring agency. The program met all requirements and is now in worldwide use.

Analyzed the information systems and corporate operations of a 2,000 employee Department of Defense agency in Atlanta, Georgia, and developed operating procedures plan for a new \$90 million headquarters facility. The plan included integration of a decision support methodology for 1,923 personal computers connected by a local area network to the SNA. The plan was accepted and implemented without modification. Also developed an employee orientation program, prepared image processing media for an orientation presentation, and made the presentation to 2000 employees.

Prepared a Business Systems Plan and restructured an information management services group for a 500-employee organization in Atlanta, developing and implementing solutions to the challenges of customer services, information security, corporate database, hardware and software acquisition, and electronic data interchange services. Increased support services availability, operations security, and organizational productivity.

Managed a multinational team of 40 computer operators, repairmen, analysts, programmers, and technicians operating a Honeywell mainframe computer facility in Belgium. The facility operated 100% of the scheduled up-time for a two year period.

Developed and implemented acquisition procedures for the annual purchase of more than \$450,000 in computer hardware, software, and Maintenance services. Administered \$850,000 software development and services contract for U.S. Department of Defense agency using a life cycle model.

Planned and managed a 16-month vertical and horizontal civil engineering construction project. Created a 105-node critical path for the 136,756 man-hour and 21,000 equipment-hour task.

**TECHNICAL
EXPERIENCE**
(continued)

Liaised with multinational construction materials and services vendors. Completed the project ahead of schedule and 11 percent below budget.

Executive Information Systems

Determined corporate critical success factors and developed an Executive Information System written in COBOL on a WANG midrange computer for strategic planning, daily operations, and issues management using electronic data from local and 23 remote offices. The chief executive staff used the system to annually negotiate \$24 million in engineering projects, civil construction, environmental, maintenance, and repair programs.

Office Automation

Designed and implemented office automation systems for U.S. Department of Defense agencies using local and wide area networks, mainframes, midrange systems, terminals, electronic data interchange, and E-mail.

Analyzed administrative and functional requirements for corporations in the fields of education, engineering, equipment manufacturing, religion, retail merchandising, and software development. Interviewed key executives to analyze organizational activities; develop solutions; and implement business, technical, and organizational strategies.

Published user manuals for commercially developed and marketed software database products. Designed and authored the manual's text, layout, typography, figures, and illustrations. Prepared camera ready masters for the printer.

Revised technical manuals written for hot melt equipment built in Germany and marketed in North and South America. Proceduralized the equipment setup, use, and troubleshooting sections to simplify instructions for factory hot melt equipment users.

**ADDITIONAL
CREDENTIALS**

U.S. Government, Top Secret Security validation with Special Background Investigation - 1989

**TECHNICAL
BACKGROUND**

Software experience with ALGOL, ASSEMBLER, BASIC, COBOL, C, PASCAL, QEMM Multitasking Environment, Microsoft Windows 3.0 graphical user interface, PC-DOS 3.XX and 4.XX, VAX/VMS DCL, OS/MVS, TSO Command Language, and ISPF-E/PDF.

Hardware experience on Personal Computers Intel 8088-80386; MacIntosh Computers; Hewlett Packard (HP) and Sun Workstations; Tempest ADPE; WANG VS45-90, DEC PDP11, VAX 6210, 3210 Midranges; and IBM and Honeywell mainframe equipment.

Peripheral experience with HP, Canon, and Dest Image Processing and Optical Character Recognition scanners; Calcomp Color Printers; Calcomp 35mm slide maker; and Videoshow presentation processor.

EDI application software experience with the Price Waterhouse EDI Cost Benefit Calculator[®] Trinary Software EDI Windows, EDI, Inc.: Telink, and Supply Tech, Inc.

Other application experience with, WANG System Administrator, Electronic Data Communications; Redimaster EIS software; PROFS, E-Mail, PC-Courier, Procomm Plus, Telix, Crosstalk, RBBS, and PC Board BBS communications software; Pagemaker and Ventura Publishing desktop publishing; Publisher's Paintbrush, Corel Draw, Image In, and Gray F/X image processing software; Readright, Omnipage, and Spot optical character recognition software; dbase III+, dBase, Rbase for Dos, and Oracle database management software; Freelance Plus, Harvard Graphics, Video Show, MS Power Point presentation graphics; Lotus 123, Quattro, Lucid 3D, and DAC accounting spreadsheet software; Word Perfect, Multimate, MS Write, MS Word, MS Word for Windows, and Letter Perfect word processors.

Network experience with Ethernet, Novell, Broadband, SNA, TCP/IP, and DDN.

**PROFESSIONAL
AFFILIATIONS**

ANSI ASC X12
IEEE Computer Society

Range of experience

Mr. Meltzer specializes in assisting organizations in the assessment, design, development and implementation of image management systems. Mr. Meltzer's extensive experience with imaging solutions from Wang Labs has recently expanded to include solutions from LaserData Systems and Plexus Corp. Mr. Meltzer has project management experience with implementation and user training for imaging systems. Mr. Meltzer has experience in providing automation solutions to the local telephone company sector of the public utility marketplace.

Education

B.S., Computer Science, The American University, Washington, DC

Professional and business history

Price Waterhouse: Manager, 1990 to present;
Wang Labs., Inc.: Consultant, 1980 to 1990;
Inter-Systems, Inc.: Systems Analyst, 1979 to 1980.

Relevant professional and business experience

Mr. Meltzer has experience in evaluation, design and development of document imaging solutions. He has successfully managed the implementation of pilot and production imaging systems following standard methodology practices.

Mr. Meltzer managed the development of a prototype imaging system for one of the largest mortgage resellers in the country. This system automated the applicant tracking process with the use of imaging technology.

Mr. Meltzer designed and managed the development of a revenue database for the billing of inter-exchange carriers of a Regional Bell Operating company. This system extracted data from an existing billing system and, using extensive 4-GL tools, created an interactive relational database model of the billing system.

Mr. Meltzer has been involved in assessing technical requirements of a number of imaging system opportunities and has developed technical requirements sections of specific proposal responses.

TECHNICAL CAPABILITIES:

Software

Wang VS-OS, SCO-Xenix
Wang PACE RDBMS, HLI, PACE-Answer-DB
Wang Integrated Imaging Systems
COBOL
Wang API toolkits
MS-DOS, MS-Windows
Project Manager Workbench
Harvard Business Graphics
Pagemaker 3.0
LaserData LaserView System
Plexus Windows 4-GL

PC Network Experience

Banyan VINES

Networking Experience

X.25	802.3
T1	ISDN
BSC	SDLC

Hardware

Wang VS series
Wang PC Classic
AT-286/386

POSITION Senior Consultant, Management Consulting Services, Office of Government Services, Washington, D.C.

EDUCATION B.A., Political Science, Valdosta State College, Valdosta, Georgia
Certificate, National Center for Paralegal Training (ABA Approved), Atlanta, Georgia

RANGE OF EXPERIENCE Ms. Robinson has over six years of experience in implementation of large and small scale information management systems for the Federal government. Through her experience she has acquired considerable understanding of government accounting and financial management standards and requirements as related to systems implementation. Her data processing experience includes analysis/requirements definition, design, construction, systems and acceptance testing, conversion, development of user and system documentation, training, and post-implementation support.

Ms. Robinson has additional experience in conducting and participating in technical and engagement management quality control reviews for Price Waterhouse and outside clients to assess financial systems plans, project scope, hardware, software, contractual agreements, design methodology and effective engagement management.

PROFESSIONAL AND BUSINESS HISTORY Price Waterhouse: Senior Consultant, July 1989 to present; Staff Consultant, July 1987 to June 1989; Professional Assistant, July 1984 to June 1987; Engagement Assistant, September 1983 to June 1984

Schwalb, Donnenfeld, Bray & Silbert, Attorneys at Law:
Administrative Assistant, June 1981 to September 1983

PROFESSIONAL AND BUSINESS EXPERIENCE *Internal Revenue Service—EDI Feasibility Study, Economic Analysis, and Prototype Plan*
EDI Analyst, 4/91 to 9/91

The Internal Revenue Service's (IRS) Electronic Management Systems (EMS) project engaged Price Waterhouse to conduct an Electronic Data Interchange (EDI) feasibility study and economic analysis as well as prepare a prototype plan for several applications within the IRS.

Continued

As an EDI Analyst, Ms. Robinson was a member of the team responsible for analyzing the current processing environments and identifying opportunities to use EDI. This task included documenting the alternative EDI solutions and evaluating the relative merits of the various alternatives.

Ms. Robinson was also involved in collecting data for and developing a Lotus 1-2-3 Cost Model in support of the economic analysis. The cost model was designed as a tool for this project as well as for evaluating future EDI proposals.

Price Waterhouse Supervisor: Tom Colberg (202-296-0800)

Internal Revenue Service--EFT Proof of Payment Study
Systems Accountant/Financial Analyst, 10/90 to 3/91

The Internal Revenue Service's (IRS) Cash Management Systems project engaged Price Waterhouse to conduct a study of current as well as planned proof of payment alternatives in the electronic funds transfer (EFT) environment.

Ms. Robinson was responsible for interviewing representatives from the involved industry groups including: financial institutions, major corporations, Electronic Data Interchange (EDI) user community, state tax authorities, National Automated Clearing House Association (NACHA), and the IRS, to determine suitable proof of payment alternatives for IRS consideration. Once all interviews were completed, Ms. Robinson performed a comparative analysis of the alternatives identified. Ultimately, recommendations were developed, supported by the comparative analysis, and presented for what IRS should consider and establish as acceptable proof of payment for tax payments received in an EFT environment. Ms. Robinson was also responsible for all aspects of project administration. Through this engagement, Ms. Robinson gained a sound understanding of the EFT environment and EDI. While on this engagement, Ms. Robinson attended EDI training which included such general topics as EDI principles, practices and standards. Specific topics such as transaction sets, mapping and translation software were also covered.

Price Waterhouse Supervisor: Ran Advani (202-296-0800)

Continued

Office of Management and Budget--Financial Systems Plans Review
Systems Accountant/Financial Analyst, 9/90 to 12/90

The Office of Management and Budget (OMB) engaged Price Waterhouse to develop a review methodology and to perform reviews, using that methodology, of OMB A-127 Financial Management Systems Plans for five government agencies.

Ms. Robinson was a member of the team that reviewed the plans and planning processes at the Internal Revenue Service (IRS). At the IRS, Ms. Robinson reviewed various plans and planning processes, including the A-127 plan, the Information Systems Plan and the Strategic Business Plan. Through this engagement, she gained a sound understanding and knowledge of the operations within the IRS.

Price Waterhouse Supervisor: Ed Heironimus (202-296-0800)

State of Hawaii, Legislative Auditor's Office--Quality Control Review
Quality Assurance Consultant, 7/90 to 8/90

Ms. Robinson participated in an engagement for the State of Hawaii's Legislative Auditor's Office to perform a quality control review of the Financial Management System (FMS) and Student Information and Program Management System (SIPMS) implementation projects at the Department of Education. The review included an assessment of the software and hardware selection, project management, systems plans, integration plans, implementation efforts and project expenditures as related to the funding provided. In addition to the review and evaluation of FMS and SIPMS, guidelines were prepared for the legislature to use when reviewing future budget requests for large, comprehensive computer applications.

Technical Environment: CICS DB2; KPMG's R*STARS
Price Waterhouse Supervisor: Rick Burnett (202-296-0800)

Continued

Price Waterhouse--In-House Quality Assurance Review (QAR) Program
Quality Assurance Consultant, 12/89 to 10/90

The QAR program was established to ensure that Price Waterhouse provides the highest quality service and products to its clients. The QAR program accomplishes this by conducting three types of quality management reviews: client service, technical quality and engagement management.

Ms. Robinson was instrumental in establishing the QAR program. She designed an information system that updates and reports on proposals and engagements using the Oracle relational data base. Ms. Robinson performed system design and logical and physical data base design, programmed, tested and created data input forms using SQL Forms for the system. After implementing the system and loading the data base, Ms. Robinson trained other QAR team members in its use.

In addition, Ms. Robinson was responsible for designing and organizing the administrative aspects related to the QAR program. These included the scheduling process, the documentation process and the reporting of new engagements. She also developed a QAR program guideline notebook for office-wide distribution.

As a team member, Ms. Robinson conducted or participated in over fifteen technical quality and engagement management reviews. The reviews were conducted to detect any issues/shortcomings with regard to project scope, hardware, software, contractual agreements, design methodology and engagement management that might cause problems in conducting the engagement. Ms. Robinson was responsible for assessing these issues and recommending corrective action.

Technical Environment: IBM PC, SQL, ORACLE, SQL Forms and SQL ReportWriter

Price Waterhouse Supervisor: Donald Caputo (202-861-6268)

The Defense Security Assistance Agency (DSAA)--Credit Management and Accounting System

Team Leader, 8/89 to 11/89

The DSAA Credit Management and Accounting System was developed by a software vendor. Price Waterhouse was engaged by

Continued

the vendor to provide accounting assistance and perform the compliance test of the system.

Ms. Robinson led the compliance test effort at the DSAA. The test was conducted to determine the accounting system's compliance with DoD and DSAA accounting standards and requirements. In addition to conducting the test, Ms. Robinson's responsibilities on the engagement included the following:

- o Planned and organized the work effort
- o Managed the project in the absence of the project manager
- o Prepared interim reports, deliverables and the final briefing
- o Kept the client informed of the test progress and problems encountered

Technical Environment: IBM, OS/MVS, IDMS, COBOL
Price Waterhouse Supervisor: George Hogeboom (202-296-0800)

The Department of Interior (DOI)--Federal Financial System (FFS) Implementation
Senior Systems Accountant, 1/89 to 8/89

FFS is an off-the-shelf accounting package for the Federal government developed by American Management Systems, Inc. (AMS). Price Waterhouse helped DOI personnel implement FFS in various DOI bureaus.

Ms. Robinson helped implement FFS at four bureaus within the DOI. She served on a four person team that performed an in-depth analysis of the current accounting operations at three of the bureaus. This included interviewing the accounting staff and documenting their current operations using the software tool, DesignAid, to develop data flow diagrams and structure charts.

Technical Environment: IBM, VSAM, COBOL
Price Waterhouse Supervisor: Lynn Cummins (202-296-0800)

Continued

U.S. Department of State--Financial Management System (FMS)

Disbursing Specialist, 1/87 to 12/88

Trainer & System Tester, 1/86 to 1/87

System, User & Training Documentation Developer, 1/85 to 1/86

Professional Assistant, 9/83 to 1/85

FMS is a world-wide system that provides integrated financial management for U.S. embassies, regional centers, serviced posts and domestic operations. FMS functions include: Budget Execution, Obligation Control, Vouchering/Accounts Payable, Accounting Interfaces, Allotment Accounting, Reference Files, Disbursing and Reimbursements.

Ms. Robinson participated in a total of 21 disbursing, accounting and budget, and accounts payable implementations overseas. Her responsibilities included the following:

- o Developed system, user and training documentation
- o Structured and conducted training of all subsystems
- o Developed standard processing checklists and specialized procedures
- o Performed acceptance testing
- o Provided on-site live support and post-implementation support

Ms. Robinson also assisted with the conversion of disbursing, accounting and funding data for six embassies. Her specialization was in the disbursing subsystem and specifically the production of payments, including funds transfers, bank reconciliation, and reporting requirements to the Department of Treasury.

Technical Environment: Wang VS100, WangNet, COBOL, TOTAL
Price Waterhouse Supervisor: George Hogeboom (202-296-0800)

TECHNICAL SUPPLEMENT

DATA
PROCESSING
EXPERIENCE

Ms. Robinson has over six years of data processing experience in large scale system implementations, development of user and system documentation, and user training

LANGUAGES

COBOL, WANG Procedure Language, C, SQL

HARDWARE

WANG VS100, VS80, IBM PC-XT, IBM PC-AT, MacIntosh

DATABASE
MANAGEMENT
SYSTEMS

TOTAL, IDMS, ORACLE

APPLICATION
PACKAGES

WANG Word Processing, PCDraw, Plantrax, WordPerfect, Lotus 123, Symphony, McDraw, DesignAid, SQL Forms, SQL ReportWriter

Range of experience

Mr. Terell is experienced in a broad range of manufacturing, materials management and logistics functions, including purchasing, production control, inventory control, maintenance, and distribution. He has a thorough background in development and implementation of systems and technologies to support manufacturing. He has performed systems development tasks such as needs analysis, concept development, planning, design, implementation, test and review, and system operations. He has served both commercial and Federal agency clients.

Education

M.B.A., General Systems and Cybernetics, George Washington University.

B.S., Business Administration, Pepperdine University.

Certified Production and Inventory Manager (CPIM)

Professional and business history

Price Waterhouse: Senior Manager 1988 to date; Manager 1985 to 1988; Senior Consultant, 1984 to 1985.

Development Science Services, subsidiary of Harbridge House: Consultant/Analyst, 1982 to 1984.

Philadelphia Naval Shipyard: Assistant to the Supply Officer, 1980 to 1982.

USS White Plains (AFS-4): Assistant to the Supply Officer, 1977 to 1980.

Relevant professional and business experience

Emerson Electric Company--CAS System Implementation, Project Manager.
8/90 to present

Mr. Terell is currently the manager for a project to provide technical and project management support in implementing a customized financial, manufacturing, and inventory control system. Mr. Terell reviewed the client's system development plans and designs and subsequently prepared a complete evaluation with recommendations for improvement. He assisted in

developing improved system designs and comprehensive implementation plans. Prior to system implementation, Mr. Terell conducted an independent test of all system features and functions, using scenarios developed from company experience. The completed test report identified many significant system and procedural deficiencies to be corrected prior to implementation. After the data was successfully converted in February 1991, Mr. Terell has been assisting with post-implementation training, adjustment to procedures, and correction of system processing problems.

Relevant professional and business experience (continued)

US Postal Service--Precision Mail Measurement System, Project Manager. 2/90 to 6/90

Mr. Terell led the design, development, and implementation of a mini-computer based system that is used to measure first class mail delivery performance for the US Postal Service. The development concept allowed for rapid implementation, three months from concept to use, by selecting an existing software package and contracting with the software vendor to extend the functionality to meet the requirements of the Postal Service. His team developed the requirements and design specifications, supervised development of the customized elements of the software, and fully tested the software after completion of each module. The testing of the software was performed using independent validation and verification techniques and documentation.

Confidential Federal Agency, Office of Logistics--ADP Acquisition -RFP Development Assistance, Technical Analyst. 10/89 to 2/90

Mr. Terell prepared selected sections of the detailed specifications in a Request for Proposal (RFP) for a large procurement of hardware and software for the Commercial Logistics Application System (CLAS). He reviewed the requirements documents in light of the commercial software currently available in the marketplace, to ensure that the contract solicitation package would support full and open competition among qualified vendors, meet agency requirements, and provide the basis for a sound contractual agreement between the agency and the contractor. Through several meetings with agency representatives, the requirements documents were completely reviewed, and additions, deletions, and modifications were made based on Mr. Terell's suggestions.

Watervliet Army Arsenal--Shop Floor Control System, Project Manager. 1/89 to 1/90

Mr. Terell was the project manager for the development and implementation of a Shop Floor Control system at the Watervliet Army Arsenal. The Shop Floor Control system is designed to perform all production related management functions including planning, scheduling, monitoring, tool and fixture management, and inventory control. The system is based on DEC VAX equipment, and features a number of advanced technology applications for data collection and production simulation. The project involved developing a strategy for the system, developing policies and procedures, and implementing the system, including data conversion planning and training.

Department of Veterans Affairs--Integrated Supply Management System, Project Manager. 9/88 to 1/89

Project manager and technical advisor for a requirements definition of a large materials management system. The system will be used to support the purchase, storage, and distribution of pharmaceuticals, medical equipment, and other supplies at over 170 Veterans Administration sites. The requirements definition includes a conceptual framework for all of the system

Relevant professional and business experience (continued)

components, and a thorough description and lists of functional specifications for each system component.

Bureau of Engraving and Printing--Manufacturing Management System, Project Manager. 1/85 to 6/88

Mr. Terell was responsible for the implementation of a manufacturing management system (MMS). His responsibilities included directing the overall planning and design of the system, and supervision of the implementation teams for item master, purchasing, inventory control, shop floor control, general ledger and customer order entry. The MMS is based on the Cullinet Manufacturing System and Cullinet Integrated Data Base Management System (IDMS) software. This project is being conducted using Price Waterhouse System Management Methodology (SMM), a proprietary procedure for ensuring successful system design and implementation. Other responsibilities include direct supervision of a team engaged to select and implement a comprehensive maintenance management system (CMMS).

Bureau of Engraving and Printing--Product Accountability System, Manager. 5/84 to 12/84

Supervised a team implementing a microcomputer based interim product accountability system (PAMIS) and associated non-automated product accountability procedures. This project was an outgrowth of the Bureau's unique requirements for a high degree of control over manufactured goods (currency, postage stamps e.g.). Tasks included a thorough review of existing manufacturing methods and product accountability controls, devising a series of accountability procedures, and assisting Bureau personnel in implementing the procedures. The microcomputer implementation included the use of IBM personal computer hardware, the "Sensible Solution" data base management system by O'Hanlon Systems, and "MAX" applications software by Micro MRP Inc.

Philadelphia Naval Shipyard--Automated Data Processing System, Project Officer. 1980-1982

Mr. Terell directed the replacement of a data processing system used for inventory control, with a modern system featuring state-of-the-art hardware, software, and telecommunications supporting Uniform Automated Data Processing System for Stockpoints (UADPS-SP). Responsibilities included analysis of needs and feasibility studies for several system alternatives; planning and forming a project team from personnel; acquisition and management of project funding; and orderly implementation, including reprogramming, phased installation, and training, without interruption to operations.

In charge of providing automated data processing support for financial and stock management of an \$80 million Navy Stock Fund (NSF) inventory using the Uniform Automated Data Processing System for Stock Points (UADPS-SP). Tasks included detailed scheduling of local input and output, capacity and priority planning at the mainframe site, and internal coordination of supply,

STEPHEN F. TERELL

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Relevant professional and business experience (continued)

comptroller, and data processing departments.

Publications and reports

Confidential Federal Agency, Office of Logistics--ADP Acquisition -RFP Development Assistance, Technical Analyst. All Deliverables.

CLASS IV

RANGE OF EXPERIENCE

Mr. Caswell has training and experience in conducting quantitative and qualitative analysis, data collection and management, and report writing in the areas of policy and program evaluation and organizational strategy and review.

EDUCATION

Master of Public Policy, Harvard University, John F. Kennedy School of Government.
Concentration in Business-Government Relations.

B.A., Economics, Haverford College, Haverford, PA.

Oxford University, Mansfield College. Tutorials in Philosophy, Politics, and Economics.

EMPLOYMENT HISTORY

Price Waterhouse, Office of Government Services, Washington, DC: Senior Consultant 1991 to present. Staff Consultant, 1990 to 1991.

New York State Department of Economic Development, Albany, NY: policy consultant, 1988 - 1990.

Nissan Motor Company Ltd., Technical Center, Atsugi-city, Japan: Intern, 1989.

SELECTED EXPERIENCE

Policy/ Program Review

Study of Food Service Management Companies in School Nutrition Programs: USDA Food and Nutrition Service.

Currently analyst on three year project to assess the range of experience of school districts that have contracted with private food service management companies (FMCs) for the provision of meal services under the National School Lunch Program (NSLP). The study involves a structured quantitative and qualitative analysis of the relationships between FMCs and school districts through contract reviews, surveys, and on-site case studies. Responsibilities to date include: extensive analysis of current data to describe market characteristics and concentrations; development of data collection instruments; nationwide survey of State Agencies to update the universe of districts with FMC contracting experience; and management of resulting database.

Economic Development in Rural New York: An Analysis of Critical Issues...An Agenda for State Action.

Performed year-long study on rural economic development in New York State for master's degree Policy Analysis Exercise. The study sought to identify the economic development needs of rural New York not being met by current state programs, and prescribe a plan for necessary state action. Successful economic development initiatives from several other states were evaluated to determine their applicability to New York. State agency officials and economic development leaders were interviewed and a plan was developed that encourages inter-agency program development, and outlines a framework for bringing rural economic development to the grass-roots level.

Organizational Functional Review

U.S. Department of Commerce: Strategic Review of Trade Development.

Currently analyst on the strategic review of Trade Development (TD), a unit of the International Trade Administration (ITA) within the Department of Commerce. The strategic review focuses on three key areas: organizational structure, planning and management analysis, and staff skills and capabilities. The objectives of the review are to:

- Define clearly the mission, roles, and primary clients of TD.
- Review key management issues and the current organizational structure; and develop alternatives where needed.
- Establish priorities for TD activities and allocate resources on a basis that maximizes the organization's effectiveness.
- Establish management goals for the next two years.

Through extensive internal and external interviews, focus groups, and discussion sessions, the review will examine missions, goals, roles and responsibilities, and the strengths and weaknesses of alternative organizational structures. The Price Waterhouse project team will identify TD's current and potential clients as well as the types of products and services these clients require. Staff skills and capabilities will be reviewed to determine the overall skills, mix, numbers, and deployment needed. As a primary resource allocation technique, the Value Analysis Methodology (VAM) will identify the products, services, and functions that are most valuable to TD, and employ a practical methodology for achieving an optimal allocation of scarce resources. Responsibilities include conducting and assisting with interviews; developing and managing the resource allocation database; and synthesizing and reporting findings.

Internal Controls Review, Federal Housing Administration: U.S. Department of Housing and Urban Development.

Analyst on engagement team which reviewed HUD/FHA Single Family Mortgage

Insurance Programs from an internal control perspective. Key tasks performed in the Internal Control Review included: documenting process lifecycles, identifying control risks and objectives, developing tests of controls, conducting Headquarters and Field office testing, documenting identified control weaknesses, and developing Self-Assessment Guides for future in-house reviews. Specific areas analyzed include: Lender Approval, Lender Monitoring, and Insurance Application Processing.

Strategic Planning

Delaware Development Office: Tourism Development Study for the State of Delaware: Phase III Master Plan.

Recently served as analyst for this final phase of a two year tourism development study for Delaware. The Master Plan presents a diverse strategic approach to tourism development for the State. The plan proposes twenty-five initiatives ranging from inter-organizational management issues, and product development and marketing initiatives; to research development, education and public awareness initiatives. In addition, the Master Plan identifies target areas for greater private sector involvement, and public-private cooperation. The Master Plan outlines prospective implementation roles and responsibilities of public, private, and non-profit organizations; describes resource requirements; and presents an implementation schedule which considers factors such as priority of initiative, resource availability, and timing with other initiatives. Responsibilities included researching tourism product characteristics, identifying opportunities for product development, and formulating a product development strategy linked as a component of the overall tourism master plan.

Strategic Review of Research and Development Operations: Nissan Motor Company, Ltd.

First American to intern with Overseas Development Division of Nissan's research and development (R&D) center. Researched literature on business globalization and developed a model for the globalization of Nissan's research and development operations. Analyzed current Nissan R&D structure and studied the globalization experience of IBM Japan through interviews with key management personnel and extensive on-site review of facilities and management structures. Final report to Nissan management targeted critical strategic areas for action, including: organizational structure, management structure, corporate culture, and technology transfer.

Education as a Catalyst for Local Economic Development: Meeting the Needs of Local Leaders in New York State.

Researched and evaluated the need for a program to educate local elected officials and community leaders on the general principles of economic development and the officials' and leaders' critical role as catalysts at the local level. Developed a survey and conducted follow-up interviews with county executives in the Southern Tier Region, as an assessment of local familiarity with the economic resource base and state and local

economic development initiatives. Outlined a curriculum based on these survey results in conjunction with Cornell University. Funding through a state grant was obtained and the program was implemented as a series of training seminars in the Summer of 1990. The program is intended to be used as a benchmark for other regions and states.

EDUCATION

BA Economics with Honors, Williams College. Honors thesis entitled, Econometric Analysis of the Effects of Migration on Union Growth.

EMPLOYMENT HISTORY

Price Waterhouse, Staff Consultant, 1990 to present.

SELECTED EXPERIENCE

Study of Food Service Management Companies in School Nutrition Program - Food and Nutrition Service:

Currently involved in this three year project to assess the extent of involvement of private food service management companies (FMCs) in providing breakfast and lunch to public schools. The study involves quantitative and qualitative analysis of the relationships between FMCs and School Food Authorities through contract reviews, surveys, and case study analysis. Responsibilities includes:

- Preparation of Study Plan
- Preparation of OMB Clearance Package
- Document collection and review
- Preparation of survey instruments
- Statistical and econometric data analysis

Study of Distribution of Supervisor Workhours - United States Postal Service:

Currently involved in this project to determine the feasibility of replacing USPS's sampling methodology for assigning supervisor labor-hours with an automated system. Presently the Postal Service samples and interviews a number of supervisors to determine the nature of work being performed. The results of these interviews are used to distribute supervisor costs to separate classes of mail. The automated system will use the Postal Service's payroll database to determine supervisor activities, eliminating the need for many interviews. Specific responsibilities on this task include:

- Analysis of USPS sampling methodology and payroll database
- Construction of cost distribution models
- Analysis of reliability and accuracy of models
- Preparation of testimony for 1991 USPS rate case

Feasibility Study of NOAA/EUMETSAT Joint Procurement of Satellite Systems - National Oceanic and Atmospheric Administration:

Lead Analyst in this project to assess the feasibility of a joint venture between NOAA and EUMETSAT (NOAA'S European counterpart). The venture would provide polar orbiting weather satellites well into the next century. Responsibilities include:

- Draft Potential Management Models for the venture
- Analyze costs and benefits of Potential Management Models
- Research legal and regulatory barriers to the joint venture and interpret U.S. and European Space policy
- Highlight key business and technical issues relevant to the venture
- Highlight areas of cost savings under each Management Model

Farmer's Home Administration - Evaluation of Farmer's Market Coupon Distribution Project (FMCDP):

Served as an on-site interviewer for this project to analyze the effectiveness of the Women, Infants, and Children (WIC) FMCDP program. Under this program, coupons are given to nutritionally needy women, infants, and children that can only be redeemed at farmer's markets for fresh produce. The objective of the program is to aid the nutritionally needy target group and to provide added income to small farmers. Responsibilities included:

- Travel to numerous towns across the country
- On-site interviews with farmers at Farmer's markets
- Other on-site data collection

Alaskan Postal Rate Analysis - U.S. Postal Service

Served on this project to determine the costs of air transportation in Alaska and their relation to mail delivered in the state. Responsibilities included:

- Collection of financial and transportation data for mainline and bush carriers in Alaska
- Development of database for each type of carrier
- Analysis of the volume of mail-related cargo over Alaskan carrier routes
- Econometric analysis of factors affecting Alaskan mail delivery costs

**OTHER
DATA ANALYSIS CAPABILITIES**

Knowledge of several IBM PC compatible programs, including IBM PC/DOS, Lotus 1-2-3, Allways, dBase, SIMPC, and WordPerfect. Experience with MacWrite, MacDraw, and Microsoft Word. Statistical packages include SAS, STATA, and LIMDEP.

Experience in:

- Data collection
- Data analysis
- Econometric Modelling

POSITION	Senior Consultant, Price Waterhouse Electronic Data Interchange Consulting Group, Washington, D.C.
PROFILE	<p>Member of a core group of consultants specializing in Electronic Data Interchange (EDI) planning and implementation in industry and government. Ms. Scanlon currently serves as an active member of the American National Standards Institute (ANSI) X12 committee to include Secretary of the ANSI ASC X12 Legal and Control Issues Task Group. She has successfully completed an intensive Price Waterhouse computer systems development training course. Selection to the course was based on Ms. Scanlon's demonstrated aptitude for performing technical and analytical tasks. During the three month program, she developed a strong working knowledge of systems development life cycles, including systems planning, design, coding and testing. She developed a working knowledge of COBOL and C languages in both microcomputer and mainframe environments.</p>
EDUCATION	B.A., English, B.A., Communications Queens College.
PROFESSIONAL HISTORY	<p>Price Waterhouse: Senior Consultant, 1990 - present Staff Consultant, 1988-1990 Research Specialist, 1987-1988.</p> <p>The American Association of Port Authorities Assistant to the Director of Membership Services for Public Relations and Convention Planning, 1985-1986.</p> <p>Horack, Talley, Pharr and Lowndes, Attorneys at Law Research Assistant, 1986.</p>
TECHNICAL EXPERIENCE	<p>Engaged on a project to develop an Electronic Data Interchange (EDI) master plan for a Fortune 200 Manufacturing Company.</p> <p>Objective of the project was to develop a Corporate EDI Policy and guidelines for its application.</p> <p>The project included a detailed analysis of the current information flow related to transactions for which EDI could be used; guidelines for cost/benefit analysis of the impact of EDI; preparation of an implementation plan for EDI projects; and an EDI presentation for</p>

**TECHNICAL
EXPERIENCE**
(continued)

internal use by corporate personnel to describe EDI policies, plans and benefits.

Engaged by Price Waterhouse, Portland for litigation research services. Project involved the research of over 150 U.S. Ports; analysis of vessel entries and clearances; market analysis of ship assist companies serving at each port surveyed; and research of market monopolies in the ship assistance industry.

Responsible for the production of the final report on a project sponsored by the U.S. Maritime Administration (MARAD) and directed by the Golden Gate Ports Association (GGPA) to design a computer system to serve the needs of the trade community operating the six GGPA member ports. The six ports are Oakland, San Francisco, Redwood City, Sacramento, Richmond, and Stockton, California. The information needs of the entire trading community, including custom house brokers/freight forwarders; shipping agents; intermodal carriers; the port authorities; and U.S. government agencies were studied. A survey was conducted to determine the state of computerization of the trading community. Preparation of the final report included the documentation of major tasks performed in the study:

- Definition of the current mix of manual and automated cargo systems at the GGPA ports
- Resolution on the capabilities of the Automated Commercial System of the U.S. Customs Service
- Assessment of the needs of local U.S. Customs officials and other government agencies
- A list of required forms and functions needed for cargo clearance and handling
- Flow charts of import and export documentation in an automated environment
- Design specifications for a computerized system
- Evaluation of software packages available from vendors and other ports

**TECHNICAL
EXPERIENCE**
(continued)

- Hardware requirements definition
- Adaption of GGPA specific design to serve as a generic model for other ports

The result of the study was a trading industry model design and guidelines for determining requirements, as well as specific recommendations for the GGPA system solution.

Included in an engagement for the National Computer Board (NCB) in Singapore to study the overall computerization needs of the Singapore trading community. Responsible for analyzing survey results, evaluating attitudes towards computerization, making recommendations to the NCB and writing the final report.

**ADDITIONAL
EXPERIENCE**

Ms. Scanlon has served as a Staff Consultant for the Price Waterhouse National Task Force for Services to the Port and Trade Community. The Group focused particularly on port automation projects such as Electronic Data InterChange (EDI), Community Cargo

Information Systems (CCIS) and Port Financial Management Information Systems (PFMIS).

Task Force responsibilities included:

- Assisting in preparing presentations on topics of interest to the trade community such as EDI software package selection, and financial issues efforts designed to increase awareness regarding computerization.
- Providing internal activities and information to familiarize offices with automation activities being undertaken by ports and others in the trade community.
- Responsible for the daily monitoring of trade-related issues which include: information on proposed and potential legislation affecting domestic and international trade; information on the activities of federal agencies that administer U.S. trade policy including the United States Maritime Administration, the Federal Trade Commission, the

**ADDITIONAL
EXPERIENCE**
(continued)

Departments of Commerce and Treasury, and the U.S.
Customs Service.

- Providing market research and analyses of EDI implementations, hardware and software solutions, and investment and technological trends.

PUBLICATIONS

"The Price Waterhouse National Resource Center." Ms. Scanlon authored this in-house journal to be used as technical support documentation for firm proposals and reports.

SPEECHES

SAIS

TECHNICAL SUPPLEMENT

**DATA PROCESSING
EXPERIENCE**

Completed intensive training course in Systems
Management Methodology

LANGUAGES

COBOL (Mainframe), C (Mainframe and Micro),
D Base IV Programming

HARDWARE

IBM: 3081
IBM PC-XT
AT&T PC-6300
Apple MacIntosh

**OPERATING
SYSTEMS**

DOS 5.0

SYSTEMS SOFTWARE

TSO, OS/MVS JCL

**APPLICATION
PACKAGES**

Lotus 123, WordPerfect 5.0, PFS Write, Microsoft Word, Free
Lance Plus, D Base, MacDraw II, Microsoft Excel, Wordstar

RANGE OF EXPERIENCE

Experience in cost/benefit analysis, financial modelling, office automation studies, training, job classification studies, survey design, and merit pay programs. Extensive background in the evaluation, recommendation, and implementation of information technology hardware and software products.

EDUCATION

B.A., Government, Georgetown University, Cum Laude, Pi Sigma Alpha Political Science Honor Society

EMPLOYMENT HISTORY

Price Waterhouse, Washington, D.C.: Senior Consultant 1991 to present. Staff Consultant, 1989 to 1991; Intern, 1986-1989.

Forsythe Computers, St. Louis, MO: Systems Consultant, 1986 to 1988.

SELECTED EXPERIENCE

Evaluation of the Food and Nutrition Service Farmers' Market Coupon Demonstration Project

Served as an analyst on an evaluation of the Food and Nutrition Service's Women, Infants, and Children (WIC) Farmers' Market Coupon Demonstration Program. The study assessed the nutritional benefits and dietary changes of women and children participating in the program as well as the financial benefits of the program for farmers. The findings were based on a survey of a random sample of 2,640 WIC participants and 400 farmers.

Cost/Benefit Analysis of the Clinical Practice Extensions for the Department of Veterans Affairs Decentralized Hospital Computer Program.

Served as an analyst on a study to evaluate the budget requests for sixteen Clinical Practice Extensions (CPEs) to the Department of Veterans Affairs Decentralized Hospital Computer Program (DHCP). Project responsibilities included: gathering cost information from a variety of VA officials across the country; collecting and reviewing information on projected benefits and translating them into quantitative estimates; and developing an extensive microcomputer spreadsheet model for the analysis of the projected costs and benefits associated with each of the CPEs and for the group as a whole. Mr. Schranck conducted multiple iterations of the analysis with varying

assumptions for quick turnaround at the client's request. The project report was used to justify budget requests from Congress.

Mr. Schranck also conducted similar analyses for four additional functional extensions to the DHCP not included as part of the Clinical Practice Extensions initiative, including a study of the migration of VA systems to X.400, GOSIP, and POSIX compatibility.

Cost/Benefit Analysis for the United States Department of Commerce, International Trade Administration, U.S. & Foreign Commercial Service

Served as a technical advisor and analyst on a project for the U.S. Department of Commerce to perform a benefit/cost analysis of an office automation platform and an enhanced Commercial Information Management System (CIMS).

Cost/Benefit Analysis of Office Automation Technology for the Department of Veterans Affairs

Served as a technical advisor and analyst on a study evaluating the costs and benefits of office automation for the Veterans Health Services and Research Administration Central Office within the Department of Veterans Affairs. Project responsibilities included: researching current office automation technology, collecting and evaluating data on measurable costs, personnel savings, and the expected qualitative benefits of different office automation approaches, and deriving the net present value of the investment decision for each configuration under evaluation.

Cost/Benefit Analysis and Evaluation of Decentralized Medical Management System (DMMS) for the Department of Veterans Affairs

Participated on a project to evaluate the procurement, pilot test, and implementation of a commercial cost accounting/management decision support system (DMMS) for the 172 VA medical centers (VAMCs) in the Veterans Health Services and Research Administration (VHS&RA). The cost/benefit analysis included evaluation of:

- VA/Contractor Performance -- Structural and process review of VA implementation of DMMS, including contractor performance, intra-agency performance, and recommendations for education and training
- Management Acceptance -- Evaluation of pilot test results, using case studies and structured interviews of users to determine the impact of the pilot test on management
- Provider Acceptance -- Collaborative research study observing the effect of DMMS on physician selection of resources and how providers use the feedback system

This engagement required collecting both qualitative and quantitative data from several VAMCs and other VA offices and then statistically analyzing the data for use in the cost/benefit model.

Training Experience

Designed, administrated, and conducted a series of internal training courses on microcomputer skills for professional and on the administrative staff. Mr. Schranck has also trained clients on the use of the financial models developed on a number of engagements.

Implementation of a Financial Management System for the National Academy of Sciences Commission on Behavioral and Social Sciences and Education

Currently serving as the lead analyst on a project to implement a microcomputer based financial management system for project tracking at the National Academy of Sciences. Mr. Schranck worked closely with officials from the Commission on Behavioral and Social Sciences and Education (CBBASE) to define the requirements for a system that could track on-going expenditures as well as provide the basis for estimating future expenses. Mr. Schranck has developed multiple iterations of three extensively integrated financial models that will allow the use of historical data as the basis for predicting future expenditures. Future enhancements to the models will include extensive macro-language automation as well as the development of training and users manuals. Mr. Schranck is the principal author for all project deliverables.

Economic Analysis for the Internal Revenue Service Currency Transaction Report Modernization Project Target Image Recognition System

Recently served as the lead analyst on a project for the Internal Revenue Service to evaluate possible Target Image Recognition System alternatives for the IRS Currency Transaction Report (CTR) Modernization Project. If implemented, the new imaging and optical/intelligent character recognition system would replace a cumbersome manual system with an automated method of processing huge volumes of paper-based information.

Project responsibilities included evaluating the current policies and procedures for processing Currency Transaction Reports; identifying alternatives to current procedures and policies that were politically, economically, and technologically feasible; interviewing government and industry experts on possible technical alternatives and configurations; gathering technical and cost data from the vendor community; developing an extensive microcomputer based financial model to estimate the baseline labor and equipment costs for the current system as well as to evaluate the costs and benefits of the different alternatives; evaluating manpower requirements of different alternatives; developing and writing user and instruction manuals for the models; developing and conducting a three-day training seminar on the design and use of the models; and issuing a report on the

findings of the economic analysis. Mr. Schranck was the principal author of all project deliverables.

Mr. Schranck's responsibilities included assisting in the preparation of Farmers' and Farmers' Market Managers questionnaires and conducting on-site interviews at farmers' markets across the country.

United States Fish and Wildlife Service

Served as an analyst on a nationwide survey to estimate motorboat fuel use by recreational boaters for the United States Fish and Wildlife Service. The purpose of the survey is to determine the percentage of Federal fuel excise taxes to be deposited in the Aquatics Resources Trust Fund. Project responsibilities included researching existing databases of recreational boaters and assisting with survey instrument design and the preparation of OMB Clearance for all survey instruments.

Field Office Automation Acquisition Manual Development for the Department of Veterans Affairs

Recently completed the development of an Office Automation Procurement Authorization Request manual to assist the 172 Medical Centers of the Department of Veterans Affairs in acquiring office automation technology. Project responsibilities included researching applicable Federal and Agency regulations pertaining to the procurement of office automation and automated data processing equipment as well as the design and development of the manual.

Procurement Procedures and Request for Proposal (RFP), Department of Veterans (VA), Decentralized Medical Management System (DMMS).

Mr. Schranck served a project to develop and issue a Request for Proposal for the Decentralized Medical Management System, a complex systems integration and expansion project which may eventually include 200 medical centers at the VA. Mr. Schranck was responsible for writing several sections of the RFP and developed many of the mandatory forms and certifications to be included with vendors' proposals. After the RFP was issued, he researched and wrote responses to vendor questions, specifically in areas concerned with Federal Acquisition Regulations (FAR) and GAO decision memoranda. Mr. Schranck also worked on the instructions for the evaluation of both the vendors' technical and cost proposals as well as the instructions for the operational capability demonstrations. Provided support to the agency throughout the process, including conducting extensive procurement regulatory review.

A-76 Review of GSA Southwestern Distribution Center

Served as an analyst on a quick-turnaround modification to an operational efficiency review of the General Services Administration's Federal Supply Service Southwestern

Distribution Center (SWDC). Responsibilities included making extensive modifications to microcomputer model and production of a revised final report.

National Archives and Records Administration A-76 Study

Served as a technical advisor for the selection and implementation of software products required to perform project analysis.

Microcomputer Committees

Mr. Schranck serves as the technical advisor to the Microcomputer Committee for the Management Science and Economics Special Practice Unit within the Office of Government Services. Mr. Schranck makes recommendations concerning requests for additional microcomputer hardware and software, as well as for standards and policies.

Austin (TX) Independent School District Job Classification and Merit Pay Program Study

Recently served as an analyst on a project to develop an employee classification and merit pay program for the Austin Independent School District (AISD), one of the largest public school systems in the country. The objective of the study was to provide AISD with: 1) a long term, strategic solution to its classification and compensation policies and practices that recognizes the nature of the current educational environment; 2) an integrated approach to managing compensation--an approach that focuses not just on compensation and the design of merit pay systems but also considers the whole organization and supports performance of the total team; and 3) a system that is acceptable to employees. A critical aspect of the study involved using interactive, consensus-building techniques to facilitate implementation of recommendations. Project responsibilities included evaluating and analyzing surveys of existing job duties, developing and writing position descriptions, and researching and analyzing merit pay programs in the education sector.

Previous Experience

Prior to becoming a Staff Consultant, worked extensively on the production of proposals, projects, and reports. Also, coordinated the selection, purchase, and installation of microcomputer hardware and software products for use by the Management Science & Economics Special Practice Unit of the Office of Government Services. Maintenance of the hardware once installed included routine preventive maintenance, repair, and installation of additional hardware to upgrade existing systems.

While at Forsythe Computers, responsible for microcomputer systems sales and support at the retail store level. Established and maintained both individual and corporate accounts, and received sales and technical training from Apple, IBM, and other leading microcomputer manufacturers. Prior to becoming a Systems Consultant, worked for

Forsythe Computers Department of Technical Services, and was involved in the testing, configuration, repair, and on-site installation of a variety of microcomputer systems.

OTHER

DATA ANALYSIS CAPABILITIES

Hardware experience includes all IBM Personal Computer systems, all IBM PS/2 systems, Compaq and other IBM-compatible hardware, all Apple Computer products; also dot-matrix, impact, inkjet, and laser printers; modems and communications hardware; OCR and graphic scanners; imaging and text retrieval systems.

Applications software experience includes MS-DOS packages Lotus 1-2-3, WordPerfect, dBase, WordStar, SAS, Excel, Paradox, PageMaker, Smartcom II and others; Apple Macintosh packages Microsoft Word, Excel, Filemaker, CricketGraph, Freehand, PageMaker, Ready, Set, Go!, MacDraw II, VersaTerm Pro, TOPS and AppleShare network software, as well as numerous technical utilities. Also experienced with data security software, including data encryption and microcomputer virus detection and elimination. Experienced in the implementation and maintenance of Local Area Networks.

PRICE WATERHOUSE
CONSULTANT

NATHAN YOUNG
Research Associate I
Income and Benefits Policy Center
The Urban Institute

Education

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| 1987 | Ph.D., Agricultural and Applied Economics with a minor in Applied Statistics, University of Minnesota |
| 1985 | M.S., Agricultural and Applied Economics, University of Minnesota |
| 1979 | B.A., Economics, University of Minnesota |

Career Brief

Nathan Young joined The Urban Institute in November 1987. In his graduate work at Minnesota, he specialized in econometrics, modeling household behavior, and policy analysis of in-kind transfer programs. His work since coming to the Urban Institute has built upon this background. Three areas of concentration have been nutrition assistance policy, microsimulation design, and database evaluation.

In the area of nutrition assistance policy, Dr. Young has worked with both food stamp programs and child nutrition programs. For the child nutrition programs he was responsible for sample design and data analysis for the Federal review of the school lunch program. For the food stamp program he is task leader in a project to develop instruments and procedures to evaluate four large demonstrations of alternative benefit issuance systems.

In the area of microsimulation design, Dr. Young has designed a system for simulation of labor supply response to work-program requirements. In addition, he has prepared a number of papers and reports in the general area of reduction of variance in microsimulation based predictions. In the related area of database evaluation, Dr. Young has worked on dynamic response errors, in the Census Bureau's Survey of Income and Program Participation.

Professional Background

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|----------------|--|
| 1987 - present | Research Associate I, Income and Benefits Policy Center, The Urban Institute |
| 1986 | Teaching Assistant, Agricultural Economics Department, University of Minnesota |
| 1981 - 1986 | Research Assistant to Professor Benjamin Senauer, University of Minnesota |

NATHAN YOUNG

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Professional Associations

American Statistical Association
American Economics Association

Papers and Publications

"Interrelationships in Household Food Demand: A Demand Systems Analysis of U.S. Food Expenditures," unpublished Ph.D. dissertation, University of Minnesota, 1987.

"The Impact of Food Stamps on Food Expenditures: Rejection of the Traditional Model," with Benjamin Senauer, American Journal of Agricultural Economics, February 1986, pp. 37-43.

"The Income Determinants of Food Expenditures: Food Stamps vs. Cash," unpublished masters thesis, University of Minnesota, 1985.

"Food Stamps Reexamined," with Benjamin Senauer, The Community Nutritionist, July/August 1983, pp. 22-28.

Conferences

"Calibration of Microsimulation Models to Administrative Data", with Linda Giannarelli, National Governors Conference, December, 1988.

"Wave Seam Effects in the SIPP", American Statistical Association Meetings, August, 1989.

"Alignment of Microsimulation Models to Target Data", with Linda Giannarelli, American Statistical Association Meetings, August, 1989.

Papers and Reports

"Designing Labor Supply Responses in Microsimulation Models: the TRIM2 Work Programs Module", with Sharon Deich, Draft Report, September, 1989.

"School Lunch Price Elasticity Estimates from the 1987/88 NFCS, FNS Final Report, May, 1991.

"Longitudinal Analysis of Food Stamp Reciprocity in the SIPP: Using Seam Constrasts to Evaluate Measurement Error Bias", Bureau of Census - Final Report, March, 1991.

Benton International
Resumes

CLASS I

JOHN B. BENTON Chairman and Chief Executive Officer

As the Chairman and Chief Executive Officer of Benton International, Mr. Benton is responsible for the growth of this consulting organization into a leading international practice with a reputation for pioneering projects.

Mr. Benton's special expertise is in business promotion and start-up activities, including business planning, strategic planning, marketing, and mergers and acquisitions. Since the mid-1980's, he has devoted considerable effort to the development and installation of an integrated planning model for evaluating and redesigning the entire retail bank product distribution system.

In addition to his general management responsibilities, Mr. Benton's activities during the past several years have included:

- Serving as the Formation Manager for the ACCEL and Interlink shared ATM/POS and POS networks for major banks of the U. S. Pacific rim, including Bank of America, U. S. National, Security Pacific, Wells Fargo, and First Interstate. Including his long-term consulting relationship with the Star Network, Mr. Benton has been one of the major contributors to the development and operation of multi-bank retail banking networks.
- Opening up the international marketplace for Benton International, starting with projects in Saudi Arabia, Kuwait, and other Middle Eastern countries. These and other assignments, particularly in the United Kingdom, led to establishing a permanent office in London, which will contribute more than 12% of the company's revenue in 1989.
- Leading the design, development, and implementation of an integrated planning model for the evaluation and re-architecture of the core delivery system of retail banks, including product/revenue forecasting, transaction forecasting, distribution channel optimization analysis, capacity planning, and customer acceptance analysis. In applications for specific major banks, these modeling efforts are leading to the development of "ideal case" delivery system designs that are 20% to 40% less expensive than the imbedded structures.
- Managing a joint venture project team to develop a delivery system for both the merchant acquirer and issuer side of a merchant-related card services program for a major European bank.
- Serving as a special advisor to the Federal Home Loan Bank Board and to FSLIC regarding the terms of financial assistance agreements negotiated under the Bank Board's Southwest Plan. Specifically, this responsibility relates to advising FSLIC on the most efficient use of assistance funds with respect to consolidation.
- Implementing a process that produced the first comprehensive strategic plan for one of the top fifteen commercial banks in the United States.

Prior to Benton International, Mr. Benton held the following positions:

- Presidentially-appointed Executive Director of the National Commission on Electronic Fund Transfers (1976-78), a position that bridged both the Ford and Carter administrations. The NCEFT created much of the policy foundation for significant banking legislation passed into law by the federal government in recent years.
- Director of Financial Industry Planning at TRW Communication Systems and Services.
- Systems and cost analyst with The Rand Corporation, where he contributed for several years to the application of systems analysis disciplines to public sector problems, particularly those of the New York City Police Department.
- Public Administration Advisory Staff member, U.S. Agency for International Development, Lahore, Pakistan in 1965.

Mr. Benton studied economics and public administration at Syracuse University, UCLA, and USC, earning his Doctorate in Public Administration from USC. Among his many publications is one of the past decade's most requested reprints from the Harvard Business Review, "The Payoffs and Pitfalls of EFT" (July 1977), as well as *Managing the Organizational Decision Process* (D.C. Heath, 1973), a book about strategic planning and organizational change. Mr. Benton is a frequent speaker before financial and electronics industry groups. He also serves on the Board of Directors of the Electronic Funds Transfer Association, and he is a Principal in The Center for Excellence in Government, an organization of former senior federal officials who are now in the private sector.

WAYNE I. BOUCHER Executive Vice President Analytic Surveys Group

Since joining Benton International in January 1984, Mr. Boucher has worked with numerous private and public clients on projects that require use of advanced techniques of strategic forecasting, issues management, and policy analysis--areas in which he is recognized nationally for his contributions over the last 25 years. His recent engagements have included the following:

- Development of policy recommendations and a strategic plan for a major U.S. regional ATM/POS network.
- Leadership of a two-year, multi-client study of the outlook to 1992 for EFT/POS in individual retail segments, covering topics such as barriers to implementation, potential consumer concerns, national and industry-specific trends, and the likely business results of full implementation of EFT/POS.
- Development and implementation of a process to enable a vendor's major account representatives to analyze a financial institution's equipment needs and prepare a strategic sales plan on the basis of indicators describing the institution's business orientation, market share, financial performance, productivity, and distribution system.
- Design and conduct of numerous Focused Planning Efforts (FPE's) to determine current and future consumer preferences for the sale and service of various bank products by alternative distribution channels.
- Identification and evaluation of possible features of an enhanced debit card, determination of usage rates and pricing, and analysis of the business case for this card under different utilization scenarios.

Mr. Boucher's prior experience includes service as Senior Research Associate at the Center for Futures Research in the Graduate School of Business Administration at the University of Southern California (1978-1984); Deputy Director and Director of Research of the presidentially-appointed National Commission on Electronic Fund Transfers (1976-1978); co-founder and Vice President of The Futures Group (1971-1976); Research Associate at the Institute for the Future (1969-1971); Deputy Assistant to the President of The Rand Corporation (1963-1969); and Instructor at the University of Missouri (1958-1963).

Mr. Boucher is author or co-author of more than 130 papers, book chapters, and reports. His books include Systems Analysis and Policy Planning, with E.S. Quade (1968); The Study of the Future: An Agenda for Research (1977); Applying Methods and Techniques of Futures Research, with J.L. Morrison and W.L. Renfro (1983); and Futures Research and the Strategic Planning Process, with J.L. Morrison and W.L. Renfro (1984). He has served on the editorial boards of a number of professional journals, including Technological Forecasting and Social Change and, currently, the Futures Research Quarterly, and he is a member of the Board of Directors of the Issues Management Association. A frequent speaker at professional and trade associations, he has also taught as an adjunct professor at UCLA, the University of Connecticut, and the School of Public Administration at USC. Mr. Boucher is listed in Who's Who in America and other directories.

John D. Broderick Executive Vice President

Since joining Benton International in March 1985, Mr. Broderick has directed and actively participated in a wide variety of client engagements, bringing to bear advanced analytical disciplines and the practical skills gained through more than 25 years of business management experience.

The focus of Mr. Broderick's consulting is the financial services industry, with emphasis on strategic planning, product development and marketing, distribution system optimization, technology integration, and profit improvement. His recent engagements have included the following:

- Overall management responsibility for a comprehensive program to integrate the resources of two major banks located in the southwest. Major elements of this program included technology and back office consolidation, product integration, branch distribution planning and consolidation, customer and employee communications, and staff and administrative department consolidation.
- Performed a functional and cost analysis of the systems and technology, marketing and product management, and distribution system administration of a major money center bank. Participated in the design and implementation of organizational restructuring to eliminate redundancy and other inefficiencies.
- Developed a strategic technology plan for a major national bank designed to support the product applications, transaction processing, and on-line service delivery requirements of multiple banking franchises through regional processing utilities. Also developed the technical implementation plan and financial business case to support the funding of this multi-million dollar technology strategy.
- Implemented a distribution system planning model to analyze alternative financial service distribution architectures for a money center bank, considering the interaction of market demographics, market segmentation, pricing, distribution channels, product offering, operating cost, and consumer product and channel preference.

Mr. Broderick's prior experience includes service with several major banking institutions. At Crocker National Bank he held the positions of Executive Vice President, Consumer Banking (1982-1984); Executive Vice President, Operations and MIS Division (1979-1982); and Senior Vice President, Computer and Telecommunications Operations (1977-1979). At Citicorp he served as Vice President and Chief Financial Officer of Citibank Person to Person, Inc. (1974-1977); Vice President and Director of Strategic and Business Planning for the Corporate Services Division of Citibank New York (1970-1972); and Manager of Production Analysis and Cost Accounting of Citibank New York (1965-1969). At the Chase Manhattan Bank of New York, Mr. Broderick served in a variety of positions in production management and systems analysis (1959-1965).

Mr. Broderick was awarded an MBA degree with concentrations in Finance and Accounting from the University of Chicago (1972-1974), and he did his undergraduate work at Fordham University and Pace University in New York.

LOUIS P. BUGLIOLI President and Chief Operating Officer

Mr. Buglioli brings over 15 years of experience in the financial services and payment service industries to Benton International. His experience has covered a broad range of activities: strategic and business planning, product marketing, project management, operations management, and distribution delivery systems.

Mr. Buglioli's expertise extends into international, wholesale, and retail banking systems, including wire transfer, credit and debit cards, ATM's, branch automation, and point-of-sale.

Prior to joining Benton International, Mr. Buglioli's affiliations and accomplishments were as follows:

- He was President, Chief Operating Officer, and Director of Telecredit, Inc., a \$100 million public company in the payment services industry. Telecredit's primary business is the third-party processing of credit cards, check authorizations, and POS debit cards. Mr. Buglioli had overall responsibility for the day-to-day management of this business, which served more than 500 financial institutions and 125,000 retail establishments nationwide.
- As Senior Vice President of Crocker National Bank, he directed all overseas correspondent banking and trade finance activities. His duties included managing all Edge Act offices in the U.S. for the International Division. Among his responsibilities were marketing, product management, sales, operations, telecommunications, and systems.
- As head of Crocker Bank's retail production operations, he was responsible for all check processing and related branch central back office activities.
- As Vice President of Citicorp, Mr. Buglioli held various positions in the Consumer Services Group. He played a major role in "branch of the future" planning, the introduction and enhancement of automated teller machines, the development of regional business centers, and the introduction of Citicard at the point of sale. In addition, he managed the check processing operations.

Mr. Buglioli studied business administration as an undergraduate at Duquesne University and holds a Masters in Science and Management from the Sloan School at the Massachusetts Institute of Technology.

CLAYTON W. JACKSON Executive Vice President

Over the last 25 years, Mr. Jackson has been responsible for the management, design, implementation, and operation of large computer facilities, communication networks, and applications for a wide variety of clients.

Since joining Benton International in May 1984, Mr. Jackson has worked on numerous engagements that require unique systems management capability. Among his recent projects are the following:

- Managed the design, development, and implementation of a high-speed IBM-based transaction switching system to integrate the teller and platform functions of merging financial institutions.
- Provided the functional specifications and internal design of an international Point-of-Sale application for a major card company.
- Developed the business requirements, functional specifications, and operations architecture for a major regional EFT consortium. Vendor analysis and selection, as well as communications technology selection and design, were also part of this assignment.
- Designed an electronic delivery architecture for a conceptual (multiple-function) plastic card. Primarily a research activity, this project required development of advanced concepts in system delivery strategies.
- For one of the nation's largest banks, participated in formulating the systems architecture for a regional data processing utility. Included in this project was the creation of the functional specification for front-end and back-end processing systems.
- Directed the management evaluation, consolidation planning, and start-up operation of a project to merge several different data processing facilities into a unified data center environment for a southwest financial institution.

Before joining Benton International, Mr. Jackson was Executive Vice President of First Interstate Services, the data processing affiliate of First Interstate Bancorp, where he was responsible for the design, implementation, and operation of First Interstate Bancorp's nationwide electronic delivery systems. He also served as Operations Chairman for the CIRRUS System and Architecture Chairman for Interlink.

Mr. Jackson earned a BA in Mathematics from Whitman College and an MS in Computer Sciences from the University of Washington. He has been granted the Certificate in Data Processing from the Institute for Certification of Computer Professionals.

NOSHIR K. KATHOK Senior Vice President

Noshir K. Kathok has more than thirteen years of experience in the electronics and computer systems industries. He has had management and technical responsibilities in marketing; product and program management, including software project management; strategic, business, and financial analysis and planning; and engineering. These areas are the focus of his consulting responsibilities.

Recent projects at Benton International have included the following:

- Policy development and program management from concept to system implementation of a major* regional shared POS and ATM network. This project included negotiation for a merger with a provider of transaction switching services.
- Primary market research of retailer needs in the electronic transaction market.
- A major analysis of structural and strategic EFT transaction pricing for both ATM and POS programs.
- Development of a computerized business environment simulation model for the business analysis of ATM and POS programs.

Prior to joining Benton International, Mr. Kathok spent ten years with the Retail and Financial systems divisions of TRW, Inc. during which he:

- Had full business responsibility for the TRW System 4000 product line, then the leading, high-performance, on-line, credit authorization system used by the nation's largest department store chains.
- Managed the TRW implementation of the J C Penney-VISA authorization systems link.
- Developed the channel distribution strategies for a new line of sophisticated retail point-of-sale systems products.
- Developed several computer models for long-range business/financial planning and new venture analysis.

As an electronics engineer with Dalmo Victor Company (a division of Textron, Inc.), Mr. Kathok helped to design and test the antennas for the manned lunar landing programs. Mr. Kathok holds a BS in Electronics Engineering from Stanford University, and an MBA with concentration in Marketing, Finance, and International Business from UCLA.

JOHN A. MACALLISTER Executive Vice President

Since joining Benton International in January 1982, Mr. MacAllister has led or participated in many client projects involving issues of strategy, product and market profitability, and performance measurement criteria. He has also developed microcomputer-based simulation models for use by Benton International clients as tools for assessing risk and investment return. His recent engagements have included the following:

- Identification and evaluation of shared transaction switching options for a major U.S. ATM and POS switch.
- Economic value assessment of an acquirer ATM switch on behalf of the acquirer ATM switch.
- Development and implementation of a new strategic plan for the trust department of one of the nation's largest thrifts.
- Assessment of the strategic and economic benefits derived from a switching client's entry into the terminal-driving business.
- Implementation of a modeling process to help a statewide subsidiary franchise of a money center bank define cost-effective alternatives to its present retail distribution system.
- Design and leadership of a study to analyze how non-interest expense is managed in six major banks.
- Design and implementation of a strategic and financial analysis process to evaluate the worth of a major West Coast bank's merchant services and credit card businesses.
- Design of an optimization model for use in a project focused on the design of a new product distribution system for a major building society in the United Kingdom.
- Design and implementation of a product profitability system for the retail banking division of a major West Coast bank.
- Design and implementation of a customer profitability system for the trust and investment management division of a major bank.

Mr. MacAllister's prior experience includes ten years as a Vice President--Commercial Lending with Union Bank in Los Angeles, California, and four years as President and Chief Operating Officer of Spring Corporation, a fully integrated real estate sales, development, and services company in Los Angeles.

Mr. MacAllister is a frequent speaker at seminars sponsored by the U.S. Small Business Administration on the subject of bank financing and entrepreneurship. He holds a BS in Finance and an MBA from the University of Southern California. He is a candidate for an MSBA degree in Finance from the same institution.

DON P. MOEHRKE Executive Vice President

Don Moehrke has more than 25 years of experience in the data processing industry. He has held line and staff positions in the development and operation of computer systems for manufacturing, distribution, and financial industry systems, including the development of the leading EFT switch software. He has worked closely with IBM and Tandem Computers and was involved in the early development of database and productivity systems.

Recent assignments at Benton International have included:

- Developing and evaluating Requests for Proposals for several networks and large grocery retailers for switching systems and services as well as in-store systems.
- Reviewing security of networks and certification of hardware encryption devices and terminals.
- Helping data-servicing organizations evaluate market trends and value business, both from seller's and buyer's perspectives.
- Developing requirements and design of systems for delivery of Electronic Payments at grocery Point of Sale, both for retailers and vendors.
- Aiding in the formation and merger of EFT networks in the U.K. and South America. Developing and evaluating disaster recovery strategies in the international environment.

Prior to joining Benton International, Mr. Moehrke held executive positions at Deluxe Data Systems (formerly A. O. Smith), where he worked for twenty years.

- As Vice President, International, he developed exclusive marketing relationships with IBM for the Connex products in Canada and the Asia-Pacific countries, as well as a non-exclusive marketing relationship in the U.S. He also managed other distributor relationships in the U.K. and Europe and provided consulting worldwide on the Connex products.
- As Vice President, Product Management, he guided product evolution and managed a pre-sales consulting staff responsible for prospect presentations and proposals. He was personally involved in nearly all of A. O. Smith's major sales.
- Prior to his work in marketing, Mr. Moehrke managed the development and support of the company's IBM and Tandem software products.
- He performed the initial analysis that took A. O. Smith into the banking and EFT industry, and he managed all aspects of the business in its early years.
- He designed and managed the development of discrete parts manufacturing software (material requirements planning, bill of material, order entry, purchasing, etc.), as well as the implementation of two high-speed database management systems for manufacturing environments.

Mr. Moehrke holds BS and MS degrees from the Sloan School of Management at the

Massachusetts Institute of Technology. He has been a frequent speaker at national and international data processing organizations. He holds a Certificate in Data Processing and has been a local officer in the Association for Computing Machinery and The Institute of Management Sciences.

BERT TOBIN Executive Vice President

Bert Tobin has over 20 years of experience both building and managing a number of pioneering systems in the electronic transaction services, financial services, and municipal resource management industries.

Mr. Tobin's accomplishments have been:

- Performing a major business case analysis of a potential ATM strategy for a top brokerage company. The study included market, geographic, and cash flow analysis, as well as functional design and implementation recommendations.
- Developing a micro-based, user-defined, prompt-driven software package for a major equipment communications company. This system allows for the rapid customization of on-line retail banking systems.
- Planning the functional design of a switch for a large card company. The switch was designed to handle POS and ATM processing transactions as well as link existing regional and institutional ATM systems.
- Developing the entire marketing data base for a card company using new system applications that marry PCs to mainframes without file downloads.
- Automating the physical plant and equipment of an entire municipal township (520,000 pop.), including the design and implementation of scheduling, inventory, vehicle maintenance, waste incineration, job cost control, and labor analysis systems, as well as incidence, route, and infrastructure mapping.
- As Vice President of Chase Manhattan Bank, he developed and installed on-line card authorization systems and was responsible for the first major POS system using magnetic stripe in 1970.
- As Vice President of Retail Planning Division for Chase, he designed and installed the first debit card, the Chase debit card, with 1.5 million users. He also planned and directed the nation's first on-line ATM efforts.

Mr. Tobin holds a BS in Economics from the Wharton School of Business and attended graduate school at New York University, School of Business. He has been the chairman of numerous ANSI committees and American Bankers Association sub-committees, and has represented the U.S. as a delegate to ISO, where he worked extensively on the global credit and debit card standards that exist today.

CLASS II

MARIA T. ARMINIO Vice President and Manager

Maria Arminio specializes in business planning, competitive analysis, and the evaluation of payment systems, products, services and technologies. Since joining Benton International in 1978, she has conducted research and consulted extensively for the financial and retail industries in such areas as POS/debit programs, ATM networks, and retail operations.

Among her recent assignments are the following:

- Designed and conducted studies on emerging technologies, including electronic data interchange, mobile data transmission, PIN management, EFT network transaction security, claims processing and adjudication, and credit and POS/debit delivery systems.
- As project manager, conducted a requirements definition and feasibility analysis of a POS/debit program for a major grocery chain, which included developing a cost/benefit analysis, vendor request for proposal, and strategic work plan.
- For a major California retailer, designed a users requirements specification, including an impact analysis, comparative evaluation of application systems, and financial modeling.
- Conducted an in-depth analysis of credit card processing operations, defining each service delivery process and improvements that would enhance the quality of customer service or reduce direct operating expense.
- For the branch and back-office operating departments of a major regional bank, designed and implemented a novel pictorial approach for documenting procedural workflows.
- Designed and developed systems documentation for the operations division of a major credit card processing company.
- In conjunction with the Electronic Funds Transfer Association, participated in a multiclient research project that described and forecasted the outlook for EFT/POS system implementation in various retailing sectors.
- Designed and directed market validation projects in such areas as branch automation equipment, ATM and cash dispensing devices, POS authorization terminals, scanning equipment, cellular telephones, and videotext terminals.

Ms. Arminio holds a BA in Marketing from the University of Notre Dame and an MBA from Loyola Marymount University. Before joining Benton International, she held sales, marketing, and management positions with NCR Corporation and with Telescribe in Los Angeles. She has authored or co-authored more than 90 publications in the areas cited above, including study results published in the report by the U.S. Congress, Office of Technology Assessment, Effect of Information Technology on Financial Services Systems (September 1984).

KAREN A. BROWN Vice President and Manager

Ms. Brown, a Senior Consultant at Benton International, has wide experience in banking and data processing. She is a specialist in project management, with experience in large-scale EFT/ATM/Teller networks and card products, from the project viability assessment phase through the post-implementation review. She is also a specialist in funds settlement, which includes the development/enhancement of procedures and forms to support the settlement function for individual ATMs/Tellers, ATM/Teller systems, and interchange activity with other networks.

Ms. Brown's recent assignments have included:

- Developed, for a new front-end system, the system external specifications and test plans. Provided the project management for the implementation of the system, as well as administered the integrated, systems assurance, quality assurance, and user acceptance tests.
- Developed, implemented and administered the acceptance test plan for a new front-end system and ATM network.
- Developed the system external specifications document for a full function regional processing center of a major bank.
- Conducted a comparative study of an in-house developed credit card processing system and an available commercial system.
- Conducted a feasibility study for a major regional ATM/POS network on purchasing an existing merchant credit card processing system and modified the system to support full credit card processing capabilities.
- Conducted a feasibility study of potential in-house credit card processing for one of the nation's largest savings and loan institutions.
- Developed the system external specifications document and the settlement operations manual for a planned international ATM switch.
- Designed a training program for data processing personnel (marketing, customer service, and programmers) in modern banking practice and EFT services.

Ms. Brown's experience before joining Benton International includes twelve years of banking and eight years in data processing for one of the top ten U.S. banks. Her data processing experience includes: ACP Processing Manager for system development and maintenance in a multi-user switch facility, Manager of User Training for an on-line teller and ATM system, Project Manager directing the development and installation of EFT (paperless) teller support in a branch environment, and Project Manager directing the development and installation of a full in-house credit card authorization system.

ALEXANDER W. COBURN Senior Consultant

Andy Coburn's background includes twenty-three years of experience in systems programming on IBM equipment, the last thirteen of which were spent designing and implementing SNA networks under MVS and MVS/XA. He has designed and coded more than 15 major VTAM application programs (including LU 6.2), and is a recognized expert in this field.

Since joining Benton International, Mr. Coburn has worked with a major EFT software supplier. His principal project has been designing and programming all the VTAM interface modules for a major EFT product. He has proposed improvements to the overall design of the product which resulted in a 200% increase in throughput. Additionally, Mr. Coburn traveled to Europe and Canada on numerous occasions to participate in the sales effort for the software, and had the opportunity to implement full X.25 support and to design an implementation for the support of OSI.

Among Mr. Coburn's prior accomplishments and experience are:

- As a Vice President of Crocker National Bank, he designed and implemented an SNA network for the bank, and designed and programmed an EFT switch that enabled Crocker's entry into shared ATM networks and point-of-sale networks to be made with only an incremental cost increase.
- As the Crocker Bank's representative on the INTERLINK and STAR network's architecture committees, he influenced the technical design so that these networks would be flexible and usable by IBM and non-IBM participants.
- As a systems programmer for the Pacific Coast Stock Exchange, Mr. Coburn designed and implemented the system which reported trades occurring on the two trading centers of the Pacific Exchange to New York, where they were included on the composite ticker tape system.
- As a systems programmer for Wells Fargo Bank (Wellsco Data), Mr. Coburn designed and programmed an MICR capture system under DOS, and was responsible for the maintenance of this software.
- As a consultant for Western Operations, Inc., he was responsible for all the DOS operating system maintenance, and for the creation of a teleprocessing line control monitor which was used in conjunction with other software sold by the company.
- As a systems programmer for the Memorex Corporation, Mr. Coburn was responsible for the disk operating system.
- At Pacific Coast Exchange, Mr. Coburn learned the techniques of systems programming, and applied these techniques to the maintenance of the disk operating system.
- Mr. Coburn has spoken at both GUIDE and SHARE meetings, where his reputation as an expert on SNA networking, switching techniques, and VTAM application programming is recognized nationally and internationally.

Mr. Coburn received a Bachelors degree in Music from Westminster College, Salt Lake City, Utah.

JAMES O. HOWARD, JR. Vice President

Mr. Howard specializes in strategic planning, market analysis, project administration, and product development for the financial services industry. His particular interest is in helping providers and suppliers of financial services to make more productive use of computer and communications-based technologies.

Recent assignments at Benton International have included:

- Developing an electronic banking delivery system plan for one of the top five brokerage firms.
- Helping one of the world's largest telecommunications companies develop a project administration system for managing major software projects.
- Constructing a model of the financial services marketplace that provides volume projections for the clients' service offerings.

Prior to joining Benton International, Mr. Howard held positions as a legal and policy analyst in the area of EFT, telecommunications, and security:

- Acting Chief Counsel of the National Telecommunications and Information Administration, U.S. Department of Commerce. At NTIA, his responsibilities included legal and policy issues in the common carrier, cable, and intellectual property areas.
- Director of the Presidential Privacy Initiative. In this position, he was responsible for coordinating the Carter Administration's overall privacy program. He was also responsible for directing the efforts of the inter-agency task force charged with recommending policies to the President on governmental operation of EFT systems.
- General Counsel, National Commission on Electronic Fund Transfers.
- Office of the General Counsel, White House Office of Telecommunications Policy under Presidents Nixon and Ford.

Mr. Howard is a graduate of Wesleyan University, did graduate work in public administration at Syracuse University, and took his law degree at the Yale Law School.

JONATHAN D. KATZ Vice President and Manager

1983-Present - Financial Systems Consultant.

- Designed, developed and managed custom financial database applications.
 - Financial database of 1,200 industrial companies with daily stock price updates. Database includes cash flow models and reports that highlighted investment opportunities based on price to cash flow.
 - Financial database of Bank Credit statistics with inquiry and reporting modules.
 - Arbitrage models and security trading system.
 - Financial models for research and development deals.
 - Leverage buy-out models.
 - Commission tracking system that interfaced with general ledger system.
 - Cash management and invoice tracking.
- Designed, developed and installed accounting systems.
 - Designed and installed custom general ledger, accounts receivable, accounts payable and time billing systems.
 - Assisted clients in developing chart of accounts, as well as establishing procedures for inputting balances and parallel testing.
 - Formulated policies and procedures for installing, testing and using different accounting modules.
- Evaluations of software and hardware for clients.
 - Prepared evaluations of alternative hardware configurations for various applications.
 - Prepared general micro-computer industry analysis.
 - Evaluated and recommended local area networks.
 - Tested peripheral equipment in order to establish corporate standards.
 - Identified software requirements and recommended financial software, graphics and desktop publishing software packages.
- Mailing lists.
 - Custom mailing list and fund raising system for non-profit organization.
 - Mailing system for advertising industry.
- Inventory and production control.
 - Developed inventory management for accessory importer.
 - Production control and yarn inventory for knitwear manufacturer.
- Clients.
 - Broker dealers.
 - Arbitrage firms.
 - Fortune 500 companies.
 - Importers \$2-5 million.

- Manufacturers \$10 million.
- Non-profit organizations.
- Real Estate companies.

1981-1983 Senior Planning Analyst - Smith Barney, Harris Upham and Co.

- Strategic planning.
 - Implemented and monitored corporate strategic plan for retail and institutional sales, corporate finance and real estate.
 - Internal consultant.
- Special projects.
 - Branch profitability.
 - Competitive compensation analysis.
 - Demographic analysis of branch locations.
 - Product mix analysis.
 - Evaluations of broker training programs.
 - Broker productivity.
 - Annual revenue projections.

1979-1981 Financial Analyst - Chemical Bank.

- Budgets and forecasts.
 - Annual budgets.
 - Quarterly forecasts and projections.
 - Automated budgeting system for data processing division.

EDUCATION

HOFSTRA UNIVERSITY, GRADUATE SCHOOL OF BUSINESS

1979 Master of Business Administration in Banking, Finance and Investment.

UNIVERSITY OF ROCHESTER

1978 Bachelor of Arts in Economics.

MICHAEL J. STRJEK
Vice President and Manager

Mr. Strjek specializes in the analysis, planning and implementation of operational activities and systems development within the financial services industry. His prior experience includes activities in operation management, business development, systems, financial analysis and corporate taxation. He offers a pragmatic approach to the solution of complex business situations.

Most recently he has:

- Managed the development and implementation of a number of projects for a major credit card association. This has included an optical image based document management system as well as database application systems.
- Developed requirements and an implementation strategy to facilitate introduction of an integrated banking statement within a major New York Money Center bank.

In previous positions he has:

- Consulted to a West German telecommunications firm regarding their establishment of a U.S. business presence.
- Developed a service bureau providing automated financial reporting services for clients of public accountants.
- Directed the financial, administrative and operational management of departments in Electronic Funds Transfer and Checking environments.
- Directed the development of an on-line automated Federal Tax Return processing system in a bank environment.
- Acted as liaison for a team of management consultants in a study of the tax/accounting systems of a major financial institution.
- Developed and managed project plans providing system and process improvements within operations environments.

Prior to joining Benton, Mr. Strjek spent two years as a consultant to Intercope subsequent to founding and directing the operation of MultiReport, a service bureau offering automated financial service products. For a period of twelve years before this, he was employed by Citibank, holding managerial positions in Checking, Electronic Funds Transfer and Taxation/Finance. Mr. Strjek holds a B.S. in Accounting from Seton Hall University.

Karen Strycker Roth Vice President and Manager

Karen Roth has over 12 years of experience in the data processing industry and retail electronic banking. Although she has specialized in software project management and systems design and analysis, her past and current assignments have involved her in all aspects of the business planning, design, development, operations and implementation of the largest financial EFT/POS/ATM networks in the United States.

Ms. Roth's engagements at Benton International have included the following:

- Development of Requests for Quotations and Proposals and evaluation of vendor responses for numerous EFT/POS/ATM networks and a large Southern California merchant.
- Performance of an ATM operations and problem management review for a major financial institution.
- General project management responsibilities for an EFT/POS/ATM network. Specific assignments for the development, testing, and installation of a new software release level.
- Development of business and operating rules for numerous domestic and international EFT/POS/ATM networks.
- Conduct of an environmental security audit and a risk assessment for a major regional EFT/POS/ATM network. Quantified potential financial impacts and the costs to mitigate certain loss types.
- Conduct of consumer transaction denial analysis studies for a major regional network in two consecutive years. Recommendation of membership incentives and internal improvement programs and procedures. In addition, design and administration of an ATM business rule audit study and an EFT/POS authorization risk analysis.
- Development, administration, and implementation of the systems and acceptance test plans for a large POS network and certification of the first institution and merchant on the network.
- Development of systems and acceptance test plans for the merging of two financial institutions' teller systems.

Before joining Benton International in 1984, Ms. Roth was Senior Program Manager Switching Services for First Interstate Services, the data processing affiliate of First Interstate Bancorp, where she was responsible for the design, implementation and operation of First Interstate Bancorp's nationwide ATM and POS delivery systems. She also served on the Operating and Technical Committees of CIRRUS System, Interlink and the Northwest Electronic Network.

Ms. Roth has held other data processing positions for Electronic Data Systems, as a systems and programming analyst for Blue Shield of California's Medicare health insurance claims processing business, and for McKesson, Inc., managing the Foods Group portion of the corporate accounting and financial systems consolidation.

Ms. Roth holds a BA degree in Economics from the University of California, Berkeley.

MICHAEL A. SCHAUER Vice President and Manager

Mr. Schauer has worked with a broad spectrum of clients in a variety of assignments, including operations design and implementation, strategic planning, project management, merger and acquisition analysis, organizational planning, and financial management, since joining Benton International in 1985. His recent engagements have included the following:

- Developed “make vs. buy” analysis economic models for multiple clients considering in-house processing vs. third-party service provider processing options.
- Evaluated and recommended strategic options for a large regional bank, with respect to their credit card issuer business and their credit card acquirer business.
- Designed and implemented a fee billing reconciliation system for a major shared ATM/POS network.
- Directed the formation of a structured project management approach and methodology for a large east coast financial institution in the process of developing an in-house check processing capability.
- For a major regional bank, participated in due diligence and directed the financial assessment of a potential service bureau acquisition.
- Conducted a management level financial audit for an EFT subsidiary of a major corporation, resulting in the identification and resolution of material errors in general ledger and financial statement reporting.
- Designed and executed an organizational analysis for the retail division of a major money center bank that led to specific recommendations which directly influenced a subsequent major reorganization.
- For a major regional ATM/POS network, performed in-depth merger and acquisition analysis relative to a potential take-over candidate.
- Designed and conducted financial evaluations of alternative delivery systems and operations services for a major commercial bank.

Mr. Schauer's prior experience includes service as Vice President and Group Manager of Central Processing Operations--International Division, Crocker National Bank (1983-1985). Previously, also with Crocker National Bank in San Francisco (1979-1983), he served in various capacities in operations management, systems administration, and financial planning. Before coming to the west coast, Mr. Schauer was associated with Citibank New York, as Operations Manager, Chief of Staff, and Financial Analyst/Controller (1974-1979). Mr. Schauer earned a BS in Economics from the City University of New York and an MBA in Finance/Economics from the University of Rochester.

Barry W. Welch Vice President and Manager

Since joining Benton International in May 1987, Mr. Welch has specialized in providing practical computer and operations solutions to ordinary and, sometimes, extraordinary business problems. His background includes a wide variety of experience in both the managerial and technical aspects of business data processing.

Mr Welch's recent assignments at Benton International have included:

- Development of a high-speed transaction conversion and message routing data switch for a large national banking institution. The system provides an integrated teller and administrative terminal front end for two diverse retail banking systems, providing the client with an interim solution before conversion of an acquired bank's data processing facilities.
- Design and implementation of a PC-network-based member information and communication system for a major credit card company. This system feeds mainframe billing and reporting systems, generates mailing labels, and tracks distribution of more than fifty member publications and warning bulletins.
- Evaluation, enhancement, and documentation of operations procedures at the regional data processing center for a major national bank.

Mr. Welch's prior experience spans more than twelve years in the data processing and communications fields, working for such diverse organizations as defense contractor Lockheed Georgia Co., clothing manufacturer Oxford Industries, and computer manufacturer Alpha Microsystems. Some of his activities included:

- Configuration, installation, and day-to-day management of a large minicomputer network for Lockheed's engineering design staff, including eight systems with over 250 users.
- Service as Vice President of Data Processing for First American Investment Group.
- Leadership of the technical design of a graphics-based decision support system for Lockheed's upper and middle management.
- Development of a vendor communications system for processing electronic clothing orders from clients of Oxford Industries.
- Design and implementation of a rate information, client billing, and corporate accounting system for a brokerage in Atlanta.
- Implementation of the firmware for the telephonics interface controller in a sophisticated automated call distribution system for Solid State Systems, an Atlanta based digital PBX manufacturer.

Mr. Welch holds a BS in Information and Computer Science (with a specialization in Systems Software) from the Georgia Institute of Technology.

CLASS III

RICK BACCHUS
Senior Consultant

Rick Bacchus specializes in Business Planning and Development, Product Development, Project Management, Market Research, and Financial Planning.

Recent Engagements:

- Assisted in the development of an RFP for a Community Health Management Information System for a major player in U.S. healthcare.
- Performed a cost and feasibility analysis of proposed alternative banking applications systems.
- Developed an intelligent workstation alternative to access banking applications software for a private banking division.
- Documented the business/functional requirements for a global private banking initiative and a Capital Adequacy Monitoring System for a credit card company.

Previous Accomplishments:

- Developed and implemented a Canada-wide pharmacy paper claims network. Responsibilities included coordinating and training deployment staff, developing marketing plan, and formulating sales and marketing materials.
- Developed a magnetic card product used to identify eligible cardholders through point-of-sale devices communicating with a central host mainframe computer to adjudicate drug insurance claims in a real time, on-line mode.
- Designed and coded a Vendor and Product/Service Information Database System for a large utilities company.
- Led several marketing and training seminars on the subject of micro-computer technology and its applications to small businesses.
- Supervised and participated in various stages of audit and non-audit engagements.
- Taught in York University's Introduction to Administrative Studies course highlighting organizational behavior, law, marketing, accounting, finance, and computer systems to first year business students.

Mr. Bacchus previously held the position of Director of Finance for Shared Health Network Services Ltd., a leading Canadian innovator in the development and deployment of electronic, point-of-sale health care transaction processing networks. In this capacity, Mr. Bacchus reported directly to the President and was responsible for supervising the accounting function, designing the accounting systems, preparing the corporate cash flow projections and financial plans; analyzing the financial results; developing the internal corporate policies; and presenting the financial statements to the Board of Directors.

Mr. Bacchus holds both an MBA and a BBA (with combined honors in Accounting and Computer Science). His graduate studies focused on Marketing, Product Management, and Organizational Behavior whereas his undergraduate program emphasized Accounting, Computer Science, and Management Science.

PETER L. CONTARDO
Senior Consultant

Peter Contardo specializes in Project Management, Business Planning and Development, Market Research, and Product Development.

Most recently he has:

- Analyzed the requirements of a Supermarket POS information system and written functional specifications for a system to evaluate customer purchases and profitability by tender. Results were used to prove whether credit card customers spent more on higher margin products.
- Developed the functional specifications for a major card association to implement a Merchant sales tracking data base.
- Produced the specifications for an RFP that defined all aspects of health claim processing and a health related data repository.

In previous positions, he has:

- Planned and managed a nationwide training project for a large diagnostic equipment manufacturer and distributor. Responsibilities included managing technical project staff, supervising product design team, and coordinating product packaging and fulfillment activities.
- Conducted market survey and needs assessment for a major technologies conglomerate. Led research team, compiled data, and wrote final reports. Presented results, analysis, and recommendation to management.
- Created franchise operations manual for a large oil company. Managed the project team that contributed to the definition, development, and implementation of the company's automotive service strategies.
- Produced employee training film and presentation for a regional oil refining and marketing company. Researched project, conducted focus groups, edited scripts, and supervised pre- and post-production functions.
- Developed a series of consumer information products to improve the customer satisfaction index of auto dealerships for the leading forms supplier to the industry. Managed technical and design team, researched and wrote material.
- Researched and established a videotape duplication business unit. Hired and supervised staff. Responsible for quality of duplication, packaging, and delivery of product to customers.
- Planned and implemented computer-based management system to facilitate control of purchases, sales, and inventory. Managed cash flow and prepared budgets. Hired, trained and evaluated staff.
- Designed sales presentation for the introduction of new franchise training and telediagnostic hotline program for a regional parts distributor. Designed marketing materials for initial customer orientation and on-going customer support.

Mr. Contardo holds both an MBA and a BS in Commerce with honors from Rider College. His graduate studies focused on Business Management and Development. His undergraduate major was Management and Organizational Behavior with a concentration in psychology.

MICHAEL FRIEDLANDER
Senior Programmer Analyst

Since joining the Benton staff in April 1991, Mr. Friedlander's experience in database application development has been applied toward the goals of enhancing, redesigning and creating several systems for a major credit card company. His design philosophy is strongly attuned to the needs of the end-user, and thus produces highly productive, tightly integrated systems designed to maximize the computer's leverage in the workplace.

Mr. Friedlander's assignments at Benton International have included:

- Development of an automated database system to monitor the changing financial condition of member institutions. The system provides an ongoing in-house analytical capability to track member adherence to a set of capital adequacy standards.
- Redesign and implementation of member information and communication system responsible for the distribution of hundreds of thousands of member publications and warning bulletins. Productivity gains up to a full order of magnitude have been realized by the integration of new technology into this system.

Prior to joining Benton International, Mr. Friedlander's fifteen years of experience with microcomputers includes consulting with major corporations such as International Paper Company and Colgate-Palmolive, as well as extensive work in the small business and not-for-profit arena. His accomplishments include:

- Implementation of a distributed database network designed to monitor production and alert management to quality control issues for International Paper.
- Design, Implementation and marketing of public and private school management information systems installed in school districts across NY, NJ, and PA.
- Creation of inventory control and cost analysis systems for a leading New York manufacturer of precious stone jewelry.
- Development of commercial and residential properties management system for a New York real estate developer.
- Design and programming involvement in a multi-lingual, multi-national field sales reporting system for Colgate-Palmolive.
- Architecting and implementing foster parent and Medical payment systems designed to expedite processing and streamline payment procedures for a New York State funded child welfare agency.
- Design and configuration of a network data collection to database to typesetting system which shortening the production timetable of an annually published guidebook by eighty percent.

Mr. Friedlander completed course-work in Business and Computer Science at Pace University. He regularly writes and lectures on microcomputer related topics for the large Westchester, New York PC community and has reviewed a variety of software products for PC Magazine.

DAVID C. OWEN Senior Consultant

David Owen's career has focused upon the design and development of software. This has spanned hardware environments ranging from IBM mainframes through a variety of mini and micro systems. He has produced PC-based software which is currently being nationally marketed and has work published on the design of an RS232C hardware switch. Prior to joining Benton International, Mr. Owen's profession experience included the following:

- As Senior Systems Engineer at Systematics Inc., he provided application support and development with an exclusive focus upon the CICS environment. These projects ranged from standard banking/financial on-line packages to the development of applications supporting high-speed transaction intercept processing.
- As President of CoFor Systems, a software development firm he founded, he lead a small team of programmers in designing several major applications for use within the trucking industry. These applications included a full preventive-maintenance and maintenance tracking system with on-line inquiry capabilities and an interstate tax preparation system.
- Software development for Veda Information Systems Corporation within the real estate industry.
- Software development for the Richard Gill Corporation within the secondary marketing and mortgage loan servicing areas.
- Software development at Arizona State University for the Military Sciences Department in the administration and personnel management areas.
- Mr. Owen founded and eventually sold a small corporation which specialized in the development of PC-based applications for the trucking industry.

Mr. Owen's expertise is in on-line systems development in both the mainframe and PC environments, and typically these packages have been high-speed, communications-oriented transaction processing applications. IBM/PC Application packages developed by Mr. Owen include:

- A PC-based CICS macro and 370 assembler generator which is currently being nationally marketed by VYCOR Corporation of Berwyn Heights, Maryland.
- A remote access servicing system for an employee and job applicant skills bank. This system is currently in use by National Employment Network of Virginia.
- A sales management tool for market analysis at the field manager level. This package is currently in use by Parke-Davis.
- A remote access, PC-based system for clients of a national insurance corporation. This system supports the local entry and editing of data with an upload capability to a host at the corporate headquarters.

Mr. Owen received a Liberal Arts Degree from Allan Hancock College in 1976 and completed Computer Science course-work at Arizona State University (1980-1983). He has published articles in the computer trades, including "Build Your Own RS232 Switch for Under \$20" for Rainbow Magazine in 1983.

CLASS IV

Alan Achterberg Consultant

Mr. Achterberg specializes in financial and business case analysis, evaluating information systems, and creating both financial and operational models. Since joining Benton International in 1989, he has focused on the analysis of delivery systems for retail banks and payment systems for retail operations.

Among his recent assignments are the following:

- **Created a working five-year projection model of a California bank's retail delivery system. Development of the model included analysis of various market, revenue, transaction, and cost data from the bank. Initially, the model was built to develop an integrated delivery system strategy for the bank. Subsequently, Mr. Achterberg has worked with the bank to integrate the model into the bank as a management decision-making tool.**
- **Conducted in-depth research into the MIS systems requirements of various retail environments to direct product development for a major producer of electronic cash registers.**
- **Conducted a business case evaluation of various request-for-proposal responses to implement a POS/debit program for a major supermarket chain.**
- **Analyzed and evaluated various regional switch fee structures for a regional switch.**
- **Worked with one of England's largest banks to evaluate their current delivery system and forecast future transaction workloads for the various delivery channels offered by the bank. This included the development of various statistical database tools for evaluating scores from consumer behavioral interviews.**
- **Worked with various vendors of bank automation equipment to evaluate potential business case models for new product lines.**
- **Developed a regional delivery system strategy for a major English building society.**

Before joining Benton International, Mr. Achterberg was the MIS Director for a Los Angeles legal firm while working to earn his B.A. in Economics from the University of California at Los Angeles. He has also used his background in computer science and mathematics to design and implement various information systems within Benton International, including invoice production, expense tracking, and profitability analysis.

Macro International
Resumes

CLASS I

Elizabeth McClellan Byrom

Education

School	Degree	Area of Concentration	Date
Virginia Polytechnic and State University	Ed.D.	Curriculum and Instruction	1983
Ohio State University	M.A.	Foreign Language Education	1971
West Virginia University	B.A.	French and English	1968

Employment

Employer	Title	Dates
Macro International	Deputy Project Director	1991-
The Council for Exceptional Children	Director of Training	1983-1991
Virginia Polytechnic and State University	Graduate Assistant: Teacher Corps	1979-1983
Roanoke County Schools	Program Coordinator	1975-1979
Jefferson Local Schools	Teacher	1972-1974
Columbus Public Schools	Teacher	1968-1971
Kanawha County AFDC	Social Worker	1968

Work Experience

For the past decade, Dr. Byrom has been responsible for planning, implementing, and evaluating a number of nationwide training programs, including (a) professional development Academies that help educators update their knowledge and skills, (b) three federally funded projects that train college and university professors in instructional technology, and (c) a project funded by the Centers for Disease Control focusing on HIV prevention and AIDS education for culturally diverse and economically disadvantaged youth. During her years as a doctoral student, she was actively involved in a Teacher Corps project aimed at improving instruction and learning in a rural Appalachian community.

She has considerable experience in program planning, development, implementation and evaluation. She has conducted dozens of highly rated workshops, coordinated small conferences, and supervised the development of training materials. As a project manager, she has learned the art of proposal and report writing, budget management, and personnel supervision. Dr. Byrom has established an on-going working relationship with higher education faculty across the nation as well as representatives of professional associations, corporations, and governmental agencies.

Sample Publications:

- Byrom, E. & Katz, G. (Eds.) (in press). *HIV/AIDS prevention education: Resources for special educators*. Reston, VA: The Council for Exceptional Children and the Association for the Advancement of Health Education.
- Byrom, E. (1990). Hypermedia (Multimedia). *TEACHING Exceptional Children*, 22(4), 47-48.
- Byrom, E. (1989). *Review of Integrating computers into the curriculum: A handbook for special educators. Remedial and Special Education*, 10, 60-61.
- Byrom, E.M. & Graves, S.A. (1989) Survey of CEC members' professional development needs. *TEACHING Exceptional Children*, 21, 78-79.
- Byrom, E.M., Gorin, S., Drill, J., Ramirez, B., Watkins, T., & Zantal-Wiener, K. (1988) *Planning barrier free meetings, conferences, and conventions*. Reston, VA: The Council for Exceptional Children.
- Blackhurst, A.E., MacArthur, C. & Byrom, E. (1987). Microcomputing competencies for special education professors. *Teacher Education and Special Education*, 10, 153-160.
- Byrom, E.M. (1987). Series of documents for the ERIC Clearinghouse on the Handicapped and Gifted. *Creativity: Programs and practices. Gifted and learning disabled. Identification of gifted students. Gifted female students. Gifted adolescents: Programs and curriculum guides*. Reston, VA: The Council for Exceptional Children.
- Byrom, E.M. (Ed.) (1987). *Special education technology in the higher education curriculum*. Reston, VA: The Council for Exceptional Children.
- McClellan, E. (1987). Series of articles: Technology for the disabled, Computer use in special education, Computer assisted instruction, Computer managed instruction, Robotics, Computer literacy. In C.R. Reynolds & L. Mann (Eds.) *Encyclopedia of special education: A reference for the education of the handicapped and other exceptional children and youth*. New York: John Wiley & Sons.
- McClellan, E. & Wheatley, W. (1985). Project RETOOL: Collaborative consultation training for post-doctoral leadership personnel. *Teacher Education and Special Education*, 8, 159-163.
- McClellan, E. (Ed.) (1984). *Microcomputer applications in special education*. Reston, VA: The Council for Exceptional Children.
- McClellan, E. (1984). Defining giftedness: An ethnographic approach. (Doctoral dissertation, Virginia Polytechnic Institute and State University, 1983). *Dissertation Abstracts International*.

Sandra Stukes Chipungu

Education

School	Degree	Area of Concentration	Date
University of Michigan	Ph.D.	Social Work-Sociology	1979
University of Michigan	M.A.	Sociology-Social Psychology	1974
University of Michigan	M.S.W.	Social Work Administration	1973
Morgan State College	A.B.	Sociology-Anthropology	1971

Employment

Employer	Title	Dates
Macro International Inc.	Research Scientist	1990-
National Catholic School of Social Service	Assistant Professor	1986
NCSSS Institute for Social Justice	Research Associate	1986
Maryland Department of Human Resources	Chief of Research	1983-1984
Baltimore Mayor's Office of Manpower Resources	Researcher	1982-1983
Abt Associates	Research Associate	1980-1982
University of Michigan, Institute of Social Research	Researcher	1979-1980

Work Experience

Dr. Chipungu is currently a Research Scientist at Macro working on the Pregnant and Postpartum Women, Infants and Children project funded by OSAP. She is primarily responsible for the conceptualization and conduct of the implementation component of the cross-site evaluation of 100 projects. Her duties also include conceptualization of culturally sensitive instruments and conducting site visits.

Dr. Chipungu has over 10 years of research and evaluation experience over a wide range of subjects. She is an accomplished survey methodologist, while combining her training as a social worker and sociologist in conducting ethnically sensitive and culturally appropriate evaluations.

Evaluation of New Endeavors, Pregnant and Postpartum Women Infants and Children—This is a local demonstration grant funded by OSAP located in Washington, D.C. Dr. Chipungu is responsible (along with colleagues at NCSSS) for the design of the process and outcome evaluation of this program for administrative and program improvement purposes.

Evaluation of the Reunification of Foster Care Children with their Natural Parents—This was an evaluation of a demonstration project designed to reunite foster care children with their natural parents by providing comprehensive flexible services to the parents and the children in order to decrease their time in care, and increase the efficiency of the Maryland Department of Child Welfare. Dr. Chipungu was responsible for the design of the

evaluation, process and outcome, training of workers to use the ongoing monthly reporting requirements, the analysis of the data, and writing of the final report. This demonstration grant resulted in a successful reunification rate of 60 percent.

Evaluation of the Impact of Monthly Reporting on Food Stamps/AFDC—This project was designed to determine the impact of monthly reporting on the administrative costs and the costs to recipients who participate in the food stamps and Aid to Families with Dependent Children programs. Dr. Chipungu was responsible for the analysis plan design and preparation of OMB clearance packages.

Survey of Magnet Schools—This study was designed to determine the impact of magnet schools on racial desegregation and the quality of education of school children. Dr. Chipungu was responsible for the design of the site visit protocols; conducting site visits; interviewing school administrators, teachers, community representatives, and leaders; and observing the students. Final reports and recommendations were made based upon these site visits to five major school districts in the United States.

Survey of Black Americans—This study was the first major national survey of Black Americans conducted in the United States. It included information on household structures, health, mental health, economic, political, and social factors. Dr. Chipungu was responsible for the design of family structure variables, training of interviewers, quality control of interviews received, coding of open-ended health home remedies data, and cleaning data files.

Survey of Black Single Working Mothers—This study was designed to ascertain the problems, concerns, and coping strategies of single Black working mothers. Information was collected on the health, mental health, socioeconomic status, help-seeking behaviors, child rearing practices, and use of formal helping systems. Dr. Chipungu was responsible for the questionnaire design, training of interviewers, quality control of completed interviews, code book design, and monitoring of the day-to-day data collection efforts.

Publications

Timberlake, E., and S.S. Chipungu. 1991 (Accepted). Grandmotherhood: Contemporary meaning among Afro-American middle class grandmothers. *Social Work*.

Everett, J., S.S. Chipungu, and B.R. Leashore. 1991. *Child Welfare: An Afri-Centric Perspective*. New Brunswick, NJ: Rutgers University Press.

Chipungu, S.S. 1991. A value based policy framework. In J. Everett, S. S. Chipungu, and B.R. Leashore, Eds. *Child Welfare: An Afri-Centric Perspective*. New Brunswick, NJ: Rutgers University Press.

Allen, W., and S.S. Chipungu. Black family lifestyles and mental health. In F. Munoz, ed. *Minority Mental Health*, Chicago, IL.

A comparative analysis: Black and white urban households and help-seeking behavior. Ph.D. Dissertation, University of Michigan, April 1979.

Quality of service review. 1983. Department of Human Resources, Social Service Administration, Baltimore, MD.

Hamilton, W.L., and J. Wood. 1982. Analysis Plan for Examining the Effects on Recipients of Monthly Reporting and Retrospective Accounting in the Food Stamp Program. Cambridge, MA: Abt Associates.

Chipungu, S.S., C. Pearson, and C. Wheeler. 1986. Reunification of foster care children: A demonstration project. Baltimore, MD: Department of Human Resources, Social Service Administration.

Robert F. Cook

Education

School	Degree	Area of Concentration	Date
Lehigh University	Ph.D.	Business and Industrial Economics	1970
Lehigh University	M.S.	Business Economics	1966
University of Maryland	B.S.	Personnel and Industrial Relations	1965

Employment

Employer	Title	Dates
Macro Systems, Inc.	Principal Economist	1990-
Macro Systems, Inc.	Technical Director	1989-1990
Westat, Inc.	Senior Economist	1983-1988
Manpower Demonstration Research Corporation	Senior Research Analyst	1982-1983
The Woodrow Wilson School, Princeton University	Research Economist	1979-1982
The Brookings Institution	Research Associate	1976-1979
Indiana State University	Associate Professor/Chairman, Department of Economics	1973-1976
Indiana State University	Assistant Professor	1970-1973
Lehigh University	Economics Instructor	1968-1970

Work Experience

Dr. Cook is the principal economist in the Applied Research Division with more than 18 years of experience in quantitative research methods and in process and impact research. He has designed net impact evaluations for State workfare programs, supervised a field associate network, and directed production of a series of reports. He has served as project director for several studies, including a process evaluation of the implementation of the Job Training Partnership Act (JTPA) program, the implementation and effects of performance standards for JTPA, a case study of JTPA implementation in Puerto Rico, an evaluation of the Unemployment Insurance Quality Control program, and alternative ways to allocate administrative costs of the Unemployment Insurance program to States. The range of Dr. Cook's experience is outlined below.

- **Performance Measurement in the Unemployment Insurance Program**--Dr. Cook is currently directing a study designed to develop a new system of performance measurement for both promptness and quality in programs administered by the Unemployment Insurance Service of the U.S. Department of Labor.

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- **Program Improvement Study of Unemployment Insurance Quality Control**--Dr. Cook directed a study of consistency in the data collected by the UI quality control program. Data collection was carried out in six States for the Unemployment Insurance Service.
 - **Case Studies of JTPA Staff Training and Technical Assistance Needs**--Dr. Cook directed a series of case studies of State, SDA, and service provider staff backgrounds and training needs for the U.S. Department of Labor.
 - **Rental Assisted Housing Quality Control Program**--Dr. Cook developed an analysis plan for the quality control program for rental assisted housing for the Department of Housing and Urban Development.
 - **Impact of Apprenticeship Training**--Dr. Cook directed a study of the net impact of apprenticeship training using data from the National Longitudinal Survey of the High School Class of 1972. The study was sponsored by the Bureau of Apprenticeship Training, U.S. Department of Labor.
 - **Unemployment Insurance Quality Control Program Evaluation**--Dr. Cook was project director of an evaluation of the Unemployment Insurance Benefit Quality Control Program. The study involved a review of the statistical design, a survey of State QC implementation, a cost-benefit analysis, and a series of case studies of State corrective action programs.
 - **JTPA/AFDC Linkages**--Dr. Cook was principal investigator for a fast response study of case studies of JTPA linkages with State employment and training programs for recipients of Aid to Families with Dependent Children (AFDC). The study was sponsored by the U.S. Department of Labor.
 - **Alternative Ways to Allocate Administrative Costs to States for the Unemployment Insurance Service (UIS)**--Dr. Cook was the Westat project director for this study conducted for the U.S. Department of Labor. This study was designed to explore and investigate ways to include measures of quality and productivity as well as differences in State UI laws in the allocation of State unemployment insurance administrative funds.
 - **Evaluation of the Implementation of JTPA Performance Standards**--Dr. Cook was the project director of this study of performance standards under Titles IIA, III and V of the Job Training Partnership Act (JTPA). This study was funded by the U.S. Department of Labor and involved site visits to several States.
 - **Case Study of the Implementation of the Job Training Partnership Act in Puerto Rico**--Dr. Cook was the project director on this study of JTPA implementation in Puerto Rico funded by the National Commission for Employment Policy.
 - **Process Evaluation of the Implementation of the Job Training Partnership Act**--Dr. Cook was the project director and principal investigator of a 2-year process study of the implementation of the Job Training Partnership Act in 20 States and 40 service delivery areas funded by the U.S. Department of Labor. This study involved the use of 50 local Field Associates who produced field reports on their jurisdictions.
 - **Continuous Longitudinal Manpower Survey--Net Impact Study**--Dr. Cook was the principal investigator on this net earnings impact study of participants in the Comprehensive Employment and Training Act (CETA) program. He also carried out a pilot for this project using participant data from the Public Employment Program (PEP). This project utilized a comparison group selected from the CPS-SSA exact match sample.
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- **National Demonstration of Net Impact Evaluations for State Workfare Programs**--As a senior research associate, Dr. Cook designed net impact evaluations for State AFDC workfare programs for a national study of these programs funded by the Ford Foundation. He worked on design issues and the availability of appropriate evaluation data from State administrative records for programs in Maine, Arkansas, Maryland, New Jersey, Washington, Oklahoma, and Michigan.
 - **Factors Affecting High School Noncompletion Among Low Income Youth**--Dr. Cook directed a program of research utilizing the longitudinal data from the Youth Entitlement Demonstration. The focus of this research was on factors associated with noncompletion of high school that may be used as targeting criteria for youth employment and training programs.
 - **Process Evaluation of the Public Service Employment Program Under CETA**--Dr. Cook was the principal investigator of a process evaluation of net employment effects of Public Service Employment under CETA using a national field associate network. He supervised the field associate network for the study and directed the production of a series of four reports for the National Commission for Employment Policy and for the Employment and Training Administration, U.S. Department of Labor.
 - **Process Evaluation of Public Service Employment Under CETA**--Dr. Cook was the principal investigator of a process evaluation of Public Service Employment under CETA. This study utilized a field associate network to assess the implementation of the training provisions included in the 1978 amendments to CETA.
 - **Consultant**--While at the Brookings Institution, Dr. Cook acted as a consultant to the New York State Legislative Commission on Expenditure Review for a study of relative net impact performance among CETA prime sponsors in the State.

Selected Publications and Reports

Books

- Cook, R., ed. 1987. *Worker dislocation: Case studies of causes and cures*. Kalamazoo, MI: The W.E. Upjohn Institute for Employment Research.
- . 1985. *Public service employment: The experience of a decade*, with C.F. Adams, Jr. and V.L. Rawlins. Kalamazoo, MI: The W.E. Upjohn Institute for Employment Research.
- . 1982. The Economic Recovery Tax Act and its effect on state and local revenues. In *Reductions in U.S. Domestic Spending*, ed. J.W. Ellwood. New Brunswick, NJ: Transaction Press.
- . 1981. *Public service employment: A field evaluation*, with R.P. Nathan and V.L. Rawlins. Washington, DC: The Brookings Institution.
- . 1979. Fiscal substitution in CETA public service employment. In *Fiscal crisis in American cities: The Federal response*, ed. L. Kenneth Hubbell. Cambridge, MA: Ballinger Publishing Company.

Articles

Cook, R. Employer provided training to new workers. (Forthcoming).

———. The relative effects of employer provided OJT and apprenticeship training. Annual Proceedings of the Industrial Relations Research Association. December

———. 1989. The effects of participation in apprenticeship training. Industrial Relations Research Association. December.

———. 1986. The public-service employment program. *Environment and planning C: Government and policy* (London, England). 4:299-307.

———. 1986. Implementation of the Job Training Partnership Act: A field network process evaluation. *Evaluation and program planning* 9(1): 73-84.

———. 1985. The Job Training Partnership Act, with V.L. Rawlins. *Publius: The Journal of Federalism* 15(3): 97-110.

———. 1985. The new federal-state program to train dislocated workers, with W.M. Turnage. *Monthly Labor Review* 108(7): 32-34.

———. 1984. The Title III Dislocated Worker Program, with W.M. Turnage. In *Thirty-seventh annual proceedings of the Industrial Relations Research Association*.

———. 1983. A pooled time-series analysis of the job creation impact of public service employment grants to large cities, with C.F. Adams, Jr. and A.J. Maurice. *The Journal of Human Resources* 18: 283-294.

———. 1979. Local versus national objectives in PSE, with V.L. Rawlins. In *Proceedings of the annual meeting of the Industrial Relations Research Association*.

———. 1978. Job displacement under CETA public service employment, with V.L. Rawlins. In *American Statistical Association, Business and Economics Statistics Section Proceedings*.

Presentations

Cook, R. 1988. Returns to apprenticeship. Paper presented to the National Alliance of Business Annual Conference. September 26.

———. 1987. Worker adjustment: Common elements of successful programs. Paper presented to the National Governor's Association Annual Employment and Training Conference. December 3.

———. 1985. The results of research on youth unemployment issues. Paper presented to the Governor's Employment and Training Department Conference on Youth at Risk. December 6.

———. 1985. Implementation of Title III of the Job Training Partnership Act. Paper presented to the National Governor's Association Conference. February 8.

———. 1984. Early implementation of the Job Training Partnership Act. Paper presented to the Job Training Partnership Council-U.S. Conference of Mayors. April 2.

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- . 1984. Factors affecting high school noncompletion among low income youth, with C.J. Reesman. Paper presented to the Annual Meeting of the Western Economic Association.
 - . 1983. The Job Training Partnership Act. Paper presented to the Northeast-Midwest Congressional Coalition. October 19.
 - . 1977. Fiscal substitution in CETA. Paper presented to the Society of Government Economists, Allied Social Science Meetings.

Briefings

- Cook, R. 1987. Quality, productivity and administrative finance. Briefing for the Unemployment Insurance Service. Employment and Training Administration, U.S. Department of Labor. May 19.
- . 1985. Results of the final phase of research on JTPA. Briefing for officials. Employment and Training Administration, U.S. Department of Labor. September 19.
- . 1985. Testimony before the Subcommittee on Employment Opportunities. Oversight hearings on the Job Training Partnership Act. May 2.
- . 1985. Phase II results of the JTPA study. Briefing for the Assistant Secretary. Employment and Training Administration, U.S. Department of Labor. February 11.
- . 1984. Implementation of the Job Training Partnership Act. Briefing for congressional staff. May 23.
- . 1984. Early service delivery area implementation of JTPA. Briefing for the Assistant Secretary. Employment and Training Administration, U.S. Department of Labor. May 14.
- . 1984. Title III of the Job Training Partnership Act. Interest group briefing. National Governor's Association. April 30.
- . 1984. State level implementation of JTPA. Briefing for the Assistant Secretary. Employment and Training Administration, U.S. Department of Labor. April 18.
- . 1984. Implementation of the Job Training Partnership Act. Briefing for the U.S. Department of Labor/ National Commission for Employment Policy. March 14.
- . 1983. The Job Training Partnership Act. Briefing for congressional staff. December 16.
- . 1983. The Job Training Partnership Act. Briefing for the National Commission for Employment Policy. November 2.
- . 1983. The Job Training Partnership Act. Briefing for the House, Education and Labor Subcommittee on employment opportunities. November 1.

Reports

- Cook, R.F. 1990. *Unemployment Insurance Quality Control Consistency Study: Final Report*, with others. U.S. Department of Labor, Unemployment Insurance Service, November.

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- . 1988. *Evaluation of the Unemployment Insurance Quality Control Program*, with other. U.S. Department of Labor, Unemployment Insurance Service. December 30.
- . 1988. Analysis of apprenticeship training from the National Longitudinal Study of the high school class of 1972. International Union of Operating Engineers and Bureau of Apprenticeship and Training. U.S. Department of Labor. June.
- . 1987. *Final Report: Analysis of relationships among performance, workload, administrative staff and resources in the Unemployment Insurance Program*. Unemployment Insurance Service Employment and Training Administration, U.S. Department of Labor. March.
- Cook, R.F., and C. Fisher. 1986. State employment service performance standards and incentive policies during TY 1984, PY 1984, and 1985. Paper prepared for the U.S. Employment Service. Employment and Training Administration, U.S. Department of Labor. October.
- Cook, R.F. 1986. JTPA - AFDC work program linkages. Paper prepared for the Office of Strategic Planning and Policy Development. Employment and Training Administration, U.S. Department of Labor. July.
- . 1986. *The Continuous Longitudinal Manpower Survey: An historical review*. Paper prepared for the U.S. Department of Labor. June.
- Cook, R.F., F. Zorilla, and A. Mayne. 1986. *Implementation of the Job Training Partnership Act in Puerto Rico: Final Report*. Paper prepared for the National Commission for Employment Policy. August.
- . 1985. *Implementation of the Job Training Partnership Act: Final Report*. Paper prepared for the Office of Research and Evaluation. Employment and Training Administration, U.S. Department of Labor. November.
- . 1985. *Dislocated Worker Projects under Title III of the Job Training Partnership Act*. Paper prepared for the Office of Research and Evaluation. Employment and Training Administration, U.S. Department of Labor. March.
- . 1984. *Transition year implementation of the Job Training Partnership Act*. Paper prepared for the Office of Research and Evaluation. Employment and Training Administration, U.S. Department of Labor. June.
- . 1984. *Early service delivery area implementation of the Job Training Partnership Act*, with others. Paper prepared for the Office of Research and Evaluation. Employment and Training Administration, U.S. Department of Labor. June.
- . 1984. *State level implementation of the Job Training Partnership Act*. Paper prepared for the Office of Research and Evaluation. Employment and Training Administration, U.S. Department of Labor. May.
- Cook, R.F., R.J. Cook, and W.M. Turnage. 1984. *The Organization of Title III of the Job Training Partnership Act in fifty states*. Paper prepared for the Office of Research and Evaluation, Employment and Training Administration, U.S. Department of Labor. May.
- Cook, R.F., V.L. Rawlins, and S.A. MacManus. 1982. *Public service employment in fiscal 1981*. Paper prepared for the Office of Research and Evaluation. Employment and Training Administration, U.S. Department of Labor. October.

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- . 1981. *Implications of alternative designs of programs of public service employment*. Paper prepared for the National Commission for Employment Policy. December.
- . 1981. Public service employment in Fiscal 1980. Paper prepared for the Office of Program Evaluation, Employment and Training Administration, U.S. Department of Labor. March.
- . 1981. *Continuous Longitudinal Manpower Survey net impact report No. 1*. Paper prepared for the Office of Program Evaluation. Employment and Training Administration, U.S. Department of Labor. March.
- . 1980. *The impact of CETA on participant earnings*, working paper #1, Entrants during the first half of 1975. Paper prepared for the Office of Program Evaluation. Employment and Training Administration, U.S. Department of Labor. January.
- Cook, R.F., R.P. Nathan, V.L. Rawlins, and J.M. Galchick. 1979. *Monitoring the public service employment program: The second round*. Special Report No. 32. National Commission for Manpower Policy. The Brookings Institution. March.
- Cook, R.F., R.P. Nathan, J.M. Galchick, and R. Long. 1978. *Monitoring the Public Service Employment Program. In Job creation through public service employment*, Report No. 6: An Interim report to the Congress of the National Commission for Manpower Policy. Volume II. The Brookings Institution. March.

Michael T. Errecart, Ph.D.

Education

School	Degree	Area of Concentration	Date
The Johns Hopkins University	Ph.D.	Mathematical Sciences	1981
The Johns Hopkins University	M.S.E.	Operations Research	1975
Massachusetts Institute of Technology	S.B.	Computer Science	1972

Employment

Employer	Title	Dates
Macro Systems, Inc.	Vice President	1979-
Macro Systems, Inc.	Associate	1977-1979
RMC Research, Inc.	Senior Associate	1973-1977
Johns Hopkins Cable Television Project	Research Associate	1974-1975
U.S. House of Representatives, Republican Conference	Assistant Editor	1972-1973
Honeywell Radiation Center	Systems Engineer	1971-1972

Work Experience

Dr. Errecart possesses broad experience in statistical analysis and modeling, sampling, survey research, statistical data processing, and research and evaluation. He has directed dozens of projects in his 19 years in the applied research field, principally focusing on projects in education and health. He currently directs the Applied Research Division, which handles Macro's work in education, training, social welfare, and market research. He is currently directing an evaluation of a computer-assisted nutrition education system for WIC programs for the Food and Nutrition Service. He is also serving as principal investigator on an SBIR project to design and develop improved systems for computer-assisted telephone interviewing systems. Dr. Errecart is also contributing to the project design and sampling methodology for a study of quality in rent-subsidy programs of the U.S. Department of Housing and Urban Development. This study involves personal interviews with 6,000 tenants in 600 housing projects. (1988-present)

He has direct corporate responsibility for a number of other current projects, including a followup of job training participants in Maryland, a follow-up study of participants in adult education programs, a national survey of schools examining the amount and type of computer software and hardware in use, and a telephone survey examining the prevalence of flu immunizations in 1990 in selected areas of the U.S.

Dr. Errecart has served as project director, principal investigator, or corporate officer in charge for more than 20 major projects over the past few years. These projects follow.

School-Based Surveys and Evaluations. Dr. Errecart has directed or designed a number of surveys examining health issues among elementary and secondary school students. They include the following:

- Served as lead analyst on the analysis of the effects of the Teen Health Teaching Module evaluation. This project employed a quasi-experimental design to evaluate the impacts of THTM on student knowledge, attitudes, practices, and behaviors.
- The Secondary School Student Risk Survey (1989) and Youth Risk Behavior Surveys (1990, 1991). This is a project to monitor high risk behaviors of adolescents with respect to AIDS. Dr. Errecart developed the sample design and is responsible for weighting and variance estimation of each annual survey. Project is funded by the Centers for Disease Control.
- The National Children and Youth Fitness Study for the Office of Disease Prevention and Health Promotion, DHHS. The project required testing the fitness levels of 10,000 youth, ages 10 to 17, and produced new national fitness norms.
- The National Children and Youth Fitness Study II. Extended the previous project to produce norms for 6 to 9 year-olds.
- The National Adolescent Student Health Survey for the Office of Disease Prevention and Health Promotion, DHHS. Designed the sample, weighted the data, and generated variance estimates.
- Five biennial surveys of Maryland adolescents in the 1980's on the use of drugs and alcohol. Samples varied from 14,000 to 44,000 students. Dr. Errecart directed three of the surveys and developed the sample designs for the remaining two.

Other Health-Related Surveys and Evaluations. Dr. Errecart has participated in many other surveys and evaluations, often serving as a statistical advisor, analyst or sample designer.

- Project manager of a telephone survey of 2,000 women in New York State on their reproductive health histories. Study employed Mitofsky-Waksberg sampling. (1988)
- Development of a dual frame (listed/RDD) sampling plan for a telephone survey of the residents of Illinois on their use of alcohol and drugs. (1990)
- Sample design of a national survey of 2,000 day care centers designed to evaluate the extent of compliance with injury control/infectious disease control recommendations of the Centers for Disease Control. (1990)
- Responsible for more than 75 RDD telephone surveys of the health insurance characteristics of residents of a private health care provider. Managed the first few surveys. (1987-1989)
- Directed a mail survey of the recipients of National Institute on Drug Abuse publications to examine the extent of use and readership and the ultimate dispositions of the product. 10,000 recipients were surveyed. (1981)
- Directed an evaluation of the "Just Say No" slogan and campaign. Employed an experimental design in which media campaigns were targeted to randomly selected communities. More than 20,000 students and their parents were surveyed. (1983)

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- Directed a study of 500 clients in treatment with primary sedative-hypnotic or stimulant abuse problems. the project investigated the role of physicians in initiating and maintaining persons with drug abuse problems. (1979)
 - Assessed the implementation of six HHS-administered block grants using survey data and secondary data sources. Results provided to congress on May 15, 1982.
 - Conducted an evaluability assessment of the National Institute on Alcoholism and Alcohol Abuse's State Manpower Development Program.
 - Long term care: Analyst and corporate officer on a three year evaluation of the Monroe County (NY) Long Term Care Program; analyst on an evaluation of the feasibility of using the Older Americans Resources (OARS) survey in lieu of expert examinations. (1974)

Student Financial Aid Projects. Dr. Errecart has had a key role in or directed projects dealing with various types of student financial aid including Pell Grants and Guaranteed Student Loans, and campus-based programs. These include the following:

- The Pell Grant Processing System project for the Department of Education that involved requirements definition, system development and testing, MIS, research studies, telephone and correspondence operations, and simulation modeling. Dr. Errecart directed Macro's startup of this contract and participated in the evaluation of the pilot program for electronic entry of Pell Grant data.
- A survey in the 1970s of 8,000 borrowers and 800 lenders in the Guaranteed Student Loan program for the Office of Education (OE) that included operations reviews at 30 lenders.
- The Basic Educational Opportunity Grant (BEOG) Quality Control Study for the Department of Education (ED) that required interviews with 4,000 students and their parents, 225 financial aid administrators, and analysis of school records and other databases. Macro's staff was responsible for the design, institutional data collection, and analysis tasks. More than 35 staff members were assigned to the project during peak periods.
- The BEOG Field Test for ED that included designing, analyzing, and field-testing three new versions of the BEOG application on a sample of 540 volunteers from secondary and postsecondary institutions.

Educational Statistics. Dr. Errecart has been involved with a number of projects for the National Center for Education Statistics and other agencies, including the following:

- The 1982 Survey of Noncollegiate Schools with Occupational Programs for NCES. Served as project director in the survey of 10,000 schools by mail.
- The 1979 Museum Survey. Served as senior analyst on this NCES/Institute for Museum Services mail survey of 1,300 museums.
- Analyst on a mail survey of 2,000 elementary and secondary schools for NCES (ELSEGIS VIB). (1975)

Cost and Econometric Studies. Dr. Errecart has also worked as a principal analyst on a number of cost studies and econometric investigations. Representative projects include the following:

- Conducted an analysis of the impact of location on the costs and services of rural hospitals in a study for the Office of the Assistant Secretary for Planning and Evaluation, DHHS.

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- Served as key analyst for a cost analysis of Follow Through for the U.S. Office of Education. Designed the model, using a resource approach, for generating cost estimates at each of several aggregation levels. Participated in the design of several survey instruments as well as interviewing sponsors, project directors, principals, and teachers of various Follow Through models. Designed an integrated data analysis plan for five surveys, and directed the programming staff in the detailed software development. Was responsible for resolving the statistical testing and estimation problems of the survey.
 - Developed log-linear models for estimating the costs of Class A Line-Haul railroad in a study for the Interstate Commerce Commission. Costs were related to resource requirements through multiple regression analysis using advanced statistical estimating techniques.
 - Estimated the demand elasticity of first- and third-class mail in a study for the U.S. Post Office. Utilized Almon-Tinsley time-series analysis technique and performed research into the use of quadratic and other high-order lag structures.
 - Developed for the Interstate Commerce Commission predictive models of the rates charged for freight movements in the United States. Project utilized a sample of 400,000 freight movements, and estimated more than 25,000 linear relations using a transcendental log model. Specialized data handling techniques were developed to implement the estimations efficiently.

While a graduate student at The Johns Hopkins University, he taught courses in introductory statistical analysis, introductory mathematical programming, and graduate-level matrix analysis. His specialty is mathematical optimization, with minors in statistics and econometrics.

Educational Technology. Dr. Errecart has been involved with a number of technology-based education projects. He served as principal investigator on a project to develop simulation software to assist young adults with special needs in making transitions from school to work. He previously developed an electronic gradebook for elementary school teachers. He has participated as a design consultant on several projects, including a voice-driven painting program, a social studies database project, and on various print, video, and audio projects.

Other Research and Evaluation Projects

- Developed a book on basic epidemiological methods for assessing drug abuse problems in developing countries. U.S. Department of State (1986)
- Development of a sampling plan for a study of road-side litter in Vermont. Plan required innovative methods of selecting study sites to estimate road-side litter counts and tonnage by road type and litter type. (1990)
- Directed an evaluation of the Interstate Job Bank for the Employment and Training Administration, U.S. Department of Labor. (1984)

Statistical Systems. Dr. Errecart has managed a number of systems projects, including the following:

- Development of a menu-driven system to detect anomalies in medical device failure reports for the Food and Drug Administration. The project involved a complex intermeshing of SAS, FORTRAN, and VMS while employing multivariate statistical techniques to detect spikes and trends in the data.
- Development of a design for improved monitoring of data collected during the course of computer-assisted telephone interviewing projects.

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- Management of the Ambulatory Health Care Information System that provided profiles of patient populations and health care utilization to managers of Neighborhood Health Centers.
 - Management of the data systems aspects of the various survey research projects mentioned previously.

Systems Analysis and Computer Programming. Dr. Errecart has extensive experience in computer programming and systems analysis, especially as they apply to large-scale data systems. He has worked on a variety of computer systems ranging from microcomputers to minicomputers (including systems by Perkin-Elmer, Hewlett Packard, Digital, Data General, and Honeywell) to mainframe systems (IBM, Honeywell, Control Data). He has worked at many Federal data centers, including the Parklawn Computer Center, DHHS's Data Management Center, the Department of Education's computing facility, and others.

Selected Reports, Presentations, and Publications

- Ross, J.G., R.S. Gold, A.T. Lavin, M.T. Errecart, and G.D. Nelson. January, 1991. Design of the Teenage Health Teaching Modules Evaluation. *Journal of School Health*. Volume 61, No. 1.
- Errecart, M.T., H.J. Walberg, J.G. Ross, R.S. Gold, J.L. Fiedler, L.J. Kolbe. January 1991. Effectiveness of Teenage Health Teaching Modules. *Journal of School Health*. Volume 61, No. 1.
- Errecart, M.T., J.F. Gonzales, J.E. Anderson. August 6, 1990. Issues in Sampling Black and Hispanics in School-Based Surveys. *1990 Proceedings of the Section on Survey Research Methods of the American Statistical Association*.
- Saavedra, P.S., M.T. Errecart, P. Weir, D. Herr, F. Winters. August 6, 1990. Geographical Stratification of Petroleum Retailers and Resellers. *1990 Proceedings of the Section on Survey Research Methods of the American Statistical Association*.
- Ross, J.G., M.T. Errecart, R.S. Gold, M. Svilar, and R.R. Page. 1988. *NCYFS II: The status of elementary physical education and its role in enhancing student health*. Presented to the Annual Meeting of the American School Health Association, Orlando, FL: September.
- Errecart, M.T. 1988. *Sampling plan for the HUD quality control project*. Prepared for the Department of Housing and Urban Development, June.
- Errecart, M.T., M. Svilar, J.G. Ross, R.S. Gold, and P.J. Saavedra. 1987. NCYFS II: Sample design. *JOPERD* 58(10): 63-65.
- Errecart, M.T. 1988. *The national adolescent student health survey: sampling plan*. Prepared for the Office of Disease Prevention and Health Promotion, August.
- Errecart, M.T., J.G. Ross, M. Svilar, and S.L. Stein. 1987. *1986-87 survey of substance abuse among Maryland adolescents*. Baltimore: Maryland Addictions Services Administration.
- Errecart, M.T. 1987. *Health insurance coverage in the Atlantic Region*. Prepared for Psychiatric Institutes of America, June.
- Errecart, M.T., et al. 1987. *An analysis of the scope of services offered by rural hospitals*. Prepared by DHHS/OS, March.

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- Errecart, M.T., J.G. Ross, S.J. Katz, M. Svilar, and S.A. Wolvek. 1985. *1984 survey of drug abuse among Maryland adolescents: General report*. Baltimore: Maryland Drug Abuse Administration.
- Errecart, M.T., J.G. Ross, S.J. Katz, M. Svilar, and S.A. Wolvek. 1985. *1984 survey of drug abuse among Maryland adolescents: Report on drug knowledge and attitudes*. Baltimore: Maryland Drug Abuse Administration.
- Errecart, M.T., J.G. Ross, S.J. Katz, M. Svilar, and S.A. Wolvek. 1985. *1984 survey of drug abuse among Maryland adolescents: Report on alcohol use*. Baltimore: Maryland Drug Abuse Administration.
- Errecart, M.T., J.G. Ross, G.G. Gilbert, and D.N. Ghosh. 1985. The national children and youth fitness study: Sampling procedures. *Journal of Physical Education, Recreation and Dance* 56(1): 54-56 (NCYFS 12-14).
- Errecart, M.T. 1986. *Methods manual for drug abuse epidemiology*. Prepared for the U.S. Department of State.
- . 1981. *Field testing of 1982-83 Basic Educational Opportunity Grant (BEOG) application forms*. Prepared for the Department of Education, December.
- . 1980. *Evaluability assessment of the State Manpower Development Program*. Prepared for the National Institute on Alcohol Abuse and Alcoholism, August.
- . 1980. *Final report of the Product Utilization Survey*. Prepared for the National Institute on Drug Abuse, July.
- . 1979. *Basic Educational Opportunity Grant Quality Control Study*. Prepared by Macro Systems, Inc. for the Office of Education, November.
- Errecart, M.T., et al. 1977. *Field test and evaluation of a functional assessment system for adults needing long-term care, Volume 2, Analysis and recommendations*. Prepared by RMC Research, Inc., for the Social and Rehabilitation Service, RMC Report UR-157, November.
- Errecart, M.T. 1978. *Is RENP a cost-effective supplement to the DCPS program?* Prepared for the National Institute of Education, February.
- . 1977. Issues in cost-effectiveness analysis of compensatory education projects. Presented to Washington Operations Research Council, September 15.
- . 1977. *A cost analysis of the response to educational needs project*. Prepared for the National Institute of Education, May.
- . 1976. *A cost analysis of Follow Through projects*. Prepared for the Office of Education, RMC Report UR-309, November.
- Errecart, M.T., et al. 1975. *A survey of lenders and borrowers participating in the Guaranteed Student Loan program*. Prepared by RMC Research, Inc., for the Office of Education, RMC Report UR-228, November.
- Errecart, M.T. 1975. *An analysis of staffing, costs, productivity, and quality data of comprehensive health services projects*. Prepared for the National Center for Health Services Research and the Bureau of Community Health Services, RMC Report UR-289, October 31.

Errecart, M.T., et al. 1973. *The structure of rail freight rates, working paper no. 4*. Prepared by RMC for the Interstate Commerce Commission, RMC Report UR-217, July.

Errecart, M.T., et al. 1973. *Short-run cost analysis of Class I line-haul railroad*. Prepared by RMC for the Interstate Commerce Commission, RMC Report UR-218, August.

Errecart, M.T. 1975. *Efficiently generating shortest paths, working paper no. 6*. Johns Hopkins Cable Television Project, December.

———. 1972. *The Honeywell Oculometer*. Unpublished bachelor's thesis, June.

Professional Affiliations

Council for Exceptional Children
American Education Research Association
American Statistical Association
Association for Computing Machinery
IEEE Computer Society

Honors

Whitehead Fellowship
Teaching Fellowship
Sigma Xi (honorary)
MIT National Scholar
National Merit Scholar
Bank of America Achievement Award

John A. Hermann

Education

School	Degree	Area of Concentration	Date
University of Maryland	Ph.D.	Social Welfare	1985
Loma Linda University	M.A.	Sociology	1972
Columbia Union College	B.A.	Sociology	1968

Employment

Employer	Title	Dates
Macro Systems, Inc.	Senior Scientist	1990-
Macro Systems, Inc.	Associate	1989-1990
Macro Systems, Inc.	Consultant	1986-1989
National-Louis University	Adjunct Professor	1988-
Columbia Union College	Professor	1973-1987
Loma Linda University Medical Center	Medical Social Worker	1972-1973

Work Experience

Dr. Hermann is currently managing two cross-site evaluations for the Office for Substance Abuse Prevention (OSAP). For the past 2 years, he has been project manager for the evaluation of OSAP demonstration programs for youth at high risk. This 3-year evaluation involves tracking the development and diffusion of the OSAP demonstration programs, repeated in-depth site visits to more than 60 programs, conduct of program evaluability assessments, pilot testing of outcome evaluation procedures, and development of replicable program models. Responsibilities include day-to-day operations of the project, sustain the involvement and review the performance of project staff as well as over 20 outside consultants, and write reports on evaluation efforts. Dr. Hermann is also project director for the evaluation of OSAP demonstration programs for pregnant and postpartum women and their infants. This 3-year project has three components: implementation evaluation, outcome evaluation, and providing grantees with evaluation technical assistance. Responsibilities include overall project administration, subcontract management, oversight of project work teams, selection and hiring of staff, review of staff performance, sustain the involvement and review the performance of 15-20 outside consultants, assist with development of evaluation designs, and assist with report writing.

As a research methodologist for a Health Resources and Services Administration (HRSA) contract to study the Comprehensive Perinatal Care Program, Dr. Hermann was responsible for sampling procedures, developing a perinatal care data base, data verification, and data analysis. This 13-month project was part of an overall evaluation of the infant mortality reduction activities administered by the Bureau of Health Care Delivery and Assistance. A cross-site assessment of the demonstration projects was prepared under this contract.

Dr. Hermann recently managed a project for the Assistant Secretary for Planning and Evaluation (ASPE), Department of Health and Human Services, to develop an evaluation strategy for the Social Security Administration's (SSA) Research Demonstration Program. Tasks of the project encompassed the following:

designing process, intermediate outcome, and final outcome evaluation plans; assessing existing SSA monitoring instruments for use in the evaluation; developing and pilot testing data collection instruments; writing training packets for each instrument; and making recommendations for improving the evaluation strategies for future grant competitions.

Dr. Hermann recently worked on two ASPE task orders for the Office of Community Services to evaluate Demonstration Partnership Program (DPP) grantee evaluation plans, conduct grantee workshops review the DPP grant process, and make recommendations for program improvement. Dr. Hermann also served as a researcher for a National Institute on Drug Abuse (NIDA) contract to develop information and materials to raise community awareness of drug abuse treatment for AIDS prevention. Responsibilities included specifying criteria for the selection of study sites, development of a data collection instrument, and development of a pilot test design.

Other projects Dr. Hermann has worked on include a Macro task order for the Bureau of International Narcotics Matters, U.S. Department of State, to develop training materials for international seminars on national narcotic public awareness campaigns. Responsibilities included the development of the following: a research guide for data collection, a model for national profiles, a planning model for problem-solving, a guide for conducting meetings, a guide for conducting presentations, and a 2-day training course on developing public awareness campaigns.

Dr. Hermann also concluded a study for ASPE of State efforts to assure quality of home care services. This project involved surveying multiple programs in each of the targeted States using site visits and telephone discussions with program officials. His responsibilities on this project included development of an analytical framework, development of discussion guides, conduct of site visits, and analysis of the data. Dr. Hermann co-managed a National Institute of Mental Health (NIMH) project to evaluate a cost-outcome methodology for the Community Support Program. His responsibilities included coordinating data collection from multiple program sites, managing data entry and the data files, data analysis using computer statistical packages, and technical writing. Dr. Hermann also provided technical assistance to a Macro study of prisoner health needs and prison health care service for the New York State Department of Prisons.

Before joining Macro full time, Dr. Hermann served as an independent consultant to Macro for its ASPE contract to evaluate State quality control mechanisms in Aid to Families with Dependent Children (AFDC) and Medicaid. This assignment included interviewing State program officials in selected States, the assessment of the use of quality control data for program management improvement, and the assessment of the impact of policy change upon program payment and client error rates.

Most recently, Dr. Hermann held a full faculty appointment at Columbia Union College, where he served as interim chairman of the Social Sciences Department in 1983, coordinator of the Social Work Program from 1979 to 1981, coordinator of the Sociology Program from 1981 to 1987, and director of Freshman Orientation for the college from 1979 to 1984. He was responsible for academic program development, program budgeting, supervision of contract instructors, and course instruction. For the External Degree Department, Dr. Hermann developed and wrote correspondence course materials for courses in social problems, cultural anthropology, medical sociology, marriage and family, and probability and statistics. He also developed educational course modules in research and statistics for the Adult Degree Department. In addition, Dr. Hermann assisted the vice president of academic affairs with institutional research on academic programs, which included applying survey design methodology, questionnaire construction, and data analysis. In this capacity, he conducted an analysis of academic performance and use of resource services by students entering college on academic probation. He also analyzed longitudinal data and wrote a technical report on academic, social, and behavioral changes experienced by baccalaureate nursing students.

Dr. Hermann currently holds an adjunct faculty appointment at the National-Louis University where he periodically teaches graduate courses in research design and methodology and data analysis.

In the summer of 1977, Dr. Hermann served a policy internship with the Division of Health Maintenance Organizations in the then Department of Health, Education, and Welfare (DHEW). He was responsible for reviewing and organizing research findings pertaining to Medicaid's contracting with HMOs. A summary report of the findings was written by Dr. Hermann for internal agency use.

Prior to joining the faculty at Columbia Union College, Dr. Hermann was a medical social worker for the Loma Linda University Medical Center. He provided social services to oncology and hematology patients. During this time, he conducted a study for the Center's Social Services Department of the discharge planning process and participated in the reorganization of such departmental procedures. Dr. Hermann also developed a database of information on nursing homes in San Bernardino County. This information became a primary resource for medical social workers coordinating nursing home placements.

Research, Publications, and Presentations

- Van Houten, T. and J.A. Hermann. 1990. "The Relationship Between Needs Assessment and Evaluation Examined within the Context of Substance Abuse Prevention." Presented to the Annual Meeting of the American Evaluation Association, Washington, DC: October 18-20.
- Hermann, J.A., et al. 1990. *Evaluation of SSA Research Demonstration Program Grants*. Social Security Administration, Office of Disability (Contract No. HHS-100-87-0039), Baltimore, MD.
- Ross, J.G., J.A. Hermann, and K.L. Kumpfer. 1990. *Report on the status of evaluation and evaluability in the OSAP Demonstration Programs for prevention of substance abuse among high risk youth and their families*. Office for Substance Abuse Prevention (Contract No. 283-88-0005), Rockville, MD.
- Ross, J.G., J.A. Hermann, and T. van Houten. 1989. Evaluating evolving prevention programs without freezing them prematurely. Presented to the annual meeting of the American School Health Association. November, Chicago, IL.
- . 1988. Review of state quality assurance programs for home care. U.S. Department of Health and Human Services, Assistant Secretary for Planning and Evaluation (Contract No. HHS-100-84-0035), Washington, DC.
- . 1988. A cost-outcome methodology for the chronically mentally ill. National Institute of Mental Health, Division of Biometry (Contract No. 278-83-0019), Rockville, MD.
- . 1987. Assessment of the effects of policy changes upon AFDC and Medicaid quality control error rates. U.S. Department of Health and Human Services, Assistant Secretary for Planning and Evaluation (Contract No. HHS-100-85-0035), Washington, DC.
- . 1987. Assessment of the usefulness of AFDC and Medicaid quality control information for management improvement. U.S. Department of Health and Human Services, Assistant Secretary for Planning and Evaluation (Contract No. HHS-100-85-0035), Washington, DC.
- Hermann, J.A. 1986. The effects of the Medicaid Spend Down Process upon the subjective well-being of nursing home residents. University Microfilms, Ann Arbor, MI.
- Hermann, J.A. 1972. The social roles of nursing home residents. Master's thesis, Loma Linda University.

Computer Experience

SPSS-PC
SPSS⁺
IBM-PC
FORTRAN
HP3000

Professional Associations

American Sociological Association
National Association of Social Workers
Southern Sociological Society
District of Columbia Sociological Society

Helen G. Hopps

Education

School	Degree	Area of Concentration	Date
Columbia University	Ph.D. (ABD)	Anthropology	1967
University of Maryland	M.A.A.	Anthropology	1988
Columbia University	M.A.	Anthropology	1984
Harvard University	--	Anthropology	1961
George Washington University	B.A.	Political Science	1958

Employment

Employer	Title	Dates
Macro Systems, Inc.	Ethnographer/Project Manager	1990-
Latin American Youth Center	Liaison/Ethnographer	1989-1990
Macro Systems, Inc.	Special Consultant	1988-1990
University of Maryland	Fieldwork Director	1988-1990
Agency for International Development	Intern	1987
University of Maryland	Teaching Assistant	1985-1986
Self-Employed	Freelance Writer and Researcher	1980-1984
Institute for Policy Studies	Director, African Project	1976-1979
Transnational Institute (IPS)	Assistant Director	1975-1976
Transnational Institute (IPS)	Program Coordinator	1973-1975
Self-Employed	Freelance Writer and Researcher	1967-1972
Columbia University	Research Assistant	1965
New York City Public Schools	Teacher	1963-1964
Harvard Center for Cognitive Studies	Research Assistant	1961-1962
Twentieth Century Fund	Research Assistant	1959-1960

Work Experience

Ms. Hopps is an experienced ethnographer with over 20 years of experience in ethnographic and related research on four continents (North America, South America, Africa, and Europe).

Ms. Hopps obtained her two Masters degrees in Anthropology from Columbia University and the University of Maryland. In addition, she completed all coursework and comprehensive examinations for a Ph.D. in Anthropology from Columbia University in 1967. Her education included a Ford Foundation field training grant to study favela (squatter settlements) in Brazil and a National Science Foundation Fellowship to conduct fieldwork in Mexico. Her relevant skills and experiences include ethnographic and other qualitative and quantitative research, projects related to homeless street youth engaged in high risk behavior, and coordination of the work of other researchers. She is fluent in Spanish, Portuguese, and French, as well as English.

Since joining Macro in October 1990, Ms. Hopps has been developing the evaluation plan of a 5-year OSAP community partnership grant and her role as ethnographer/evaluator. This has involved observing coalition meetings and neighborhoods, interviewing government staff, getting to know residents, and preparing a needs assessment. She is also engaged in the national, multi-site evaluation of OSAP high-risk youth grants. In addition to assessing projects and their products, she is analyzing outcome findings.

In 1988, she became a special consultant to Macro on a variety of projects related to multiproblem street youth. On the OSAP evaluation of demonstration projects for high-risk youth, she served as a site visitor and prepared case study reports on visited programs. On the ACYF study of the underlying causes of youth homelessness, she participated in the design, pilot testing, and revision of the survey instrument, and in preparation of the OMB clearance package.

She was the director of field research for COPE (Children's Outreach and Program Evaluation), an OSAP-funded project on homeless Hispanic street youth in Washington, D.C. conducted by the University of Maryland. The objectives of this project were to estimate the prevalence of homelessness among Hispanic youth in the District and to describe how these youth lead their lives. One of the interesting definitional issues encountered was the fact that while many Hispanic street youth do have some kind of "home," on a day-to-day basis they are entirely responsible for themselves. Ms. Hopps was responsible for developing contacts with youth, questionnaire revision, interviewing, and qualitative data collection and analysis. She participated in coding and the design of statistical analyses.

As ethnographer at the Latin American Youth Center (LAYC) she did participant observation and ethnographic interviewing of youth and staff, conducted a neighborhood survey and assessment, evaluated and documented projects, and prepared proposals. She assisted in developing a peer counseling program, did training, focus groups, and liaison with outside organizations.

For the Legal Defense and Education Fund of the N.A.A.C.P., Ms. Hopps worked for 2 years as a consulting ethnographer in a multi-ethnic community, undergoing large-scale renovation and tenant eviction. She conducted a community survey, a household census, analysis of family composition and income, facilitated implementation of the legal settlement, and monitored efforts to find housing for displaced persons and families. She produced a study of adolescents, who camped from apartment to apartment, many in boarded-up buildings.

Earlier, for the Institute for Policy Studies (IPS), she was engaged in a variety of projects from 1973-1979. As director of the IPS Africa Project (1976-1979), she organized public seminars, established a resource and information center, supervised research of Washington Semester students, and lectured at local universities and schools. She also served as program coordinator and, later, assistant director of the Transnational Institute of IPS, which was a conference and study center for Third World and European researchers in Amsterdam, the Netherlands.

Her other related experiences are wide and varied. They include teaching courses on Culture and Personality as well as Anthropological Linguistics; serving as a researcher for the author Gore Vidal in writing a historical play, *An Evening with Richard Nixon*; conducting ethnographic research on AID-assisted development projects, primarily low-income and self-help housing, in five East African nations; teaching fourth grade in a New York City public school; and serving as an interviewer or data coordinator on a number of other research projects.

Publications

- Tyler, F., H. Hopps, L. Kalgee, and S. Tyler. Submitted for review. *Attitudes of Central American Parents toward adolescent alcohol use.*
- Hopps, H., S. Tyler, and B. Warner. 1989. Working with D.C.'s homeless Hispanic youth. *Practicing Anthropology* 11(2).
- Hopps, H. ed. 1983. *The South Africa Reader*. Unpublished collection of historical documents, essays, and legislation.
- Hopps, H., and J. Randall. 1979. The Trilateral Commission. *New Internationalist*, London, April.
- Hopps, H. 1978. Apartheid: You can bank on it. *Seven Days*, October.
- Hopps, H. ed. 1978. *South Africa, foreign investment, and apartheid*. Washington: Institute for Policy Studies.
- Hopps, H. 1977. Comments on South Africa symposium. *Woodrow Wilson Quarterly*, Spring.
- Hopps, H., and B. Raskin. 1972. The Kennedy Center. *The Washington Monthly*, February.
- Mencher, J.P., and H. Hopps. 1967. Namboodiri kinship in the State of Kerala (with J.P. Mencher). *Man, Journal of the Royal Anthropological Institute* 2(1), March.

Conference Presentations

- Hopps, H. 1991. Prevention projects for pre-schoolers. Presented at 1st National Conference on Model Prevention Programs for Children 0-7. Wholistic Stress Control Institute, Atlanta, Georgia, March.
- Hopps, H. 1991. Dropping out or dropping in: Hispanic high-risk youth in the nation's capital. Presented at the annual meeting of the Society for Applied Anthropology, Charleston, South Carolina, March.
- Hopps, H. 1990. A view from the curb. Presented at the annual meeting of the Society for Applied Anthropology, York, England, March.
- Kalgee, L., S. Tyler, H. Hopps, and I. Carabal. 1990. Drug and alcohol use among Hispanic youth: An interdisciplinary research and intervention program. Presented at the annual meeting of the Society for Applied Anthropology, York, England, March.

Memberships

American Anthropological Association
Society for Applied Anthropology

Albert W. Irion

Education

School	Degree	Area of Concentration	Date
Wharton School of Finance and Commerce	M.S.	Accounting	1970
University of Pennsylvania	B.S. (Economics)	Accounting	1969

Employment

Employer	Title	Dates
Macro Systems, Inc.	Technical Director	2/86-
Macro Systems, Inc.	Associate	4/78-1/86
Macro Systems, Inc.	Consultant	8/75-3/78
Arthur Andersen & Co.	Senior Auditor	2/72-7/75
U.S. Army	Intelligence Analyst	10/70-12/71
Arthur Andersen & Co.	Staff Auditor	8/70-10/70

Work Experience

Since joining Macro Systems, Inc., Mr. Irion has directed and participated in numerous assignments in the areas of research and evaluation; financial management, technical assistance, and management information systems; and facilities management, transition, and operations.

Financial Management, Management Information Systems, And Technical Assistance

Mr. Irion is currently the deputy project director for the National Training System (NTS) funded by the Office for Substance Abuse Prevention. As part of the war on drugs, the NTS is a 3-year large-scale effort to develop and deliver more than 60 training programs per year for prevention, early recognition, intervention, and treatment for alcohol and other drug abuse. Mr. Irion is responsible for directing activities for the development of curricula and delivery of training for health professionals and community groups, including physicians, nurses, substance abuse counselors, social workers, psychologists, school counselors, youth group leaders, clergy, parents, youth, criminal justice personnel, and businesses. He is also responsible for administering subcontract and consultant agreements, maintaining and monitoring contract budgets, and directing the maintenance of a major database of training resources and training needs.

Under contract to National Computer Systems for the U.S. Department of Education, Mr. Irion was the subcontract project officer for conversion development testing of the Guaranteed Student Loan/National Defense Student Loan System. This system contains over 700 programs in COBOL, CICS, and IDMS operating on an IBM mainframe. During software migration for this system, Mr. Irion also served as a test team leader responsible for test plan development, creation of test data, test execution, and analysis of results.

Mr. Irion recently served as project director on an assignment for the Department of Labor to develop and conduct technical assistance and training workshops for State and local grantee staff operating employment and

training programs that serve migrant and seasonal farmworkers. His responsibilities included developing of technical assistance materials, delivering technical assistance, and designing a job development demonstration model. A series of three regional and one national workshops were conducted covering program operations (assessment, counseling, classroom training, and on-the-job training), marketing and job development, and management topics. Training was conducted nationwide for approximately 350 program managers and staff. Additionally, technical assistance materials were developed and disseminated to program operators in all of the States.

Mr. Irion previously managed a Department of Health and Human Services task order to determine the feasibility of identifying the costs of patient care and research at the National Institutes of Health Clinical Center. This feasibility study involved an assessment of cost and clerical information currently available and identification of additional information needs. Products developed included documentation of existing management information and cost accounting systems, a feasibility plan to identify and standardize the cost accounting system, and a request for proposal to develop a modified cost accounting system at the Clinical Center.

Mr. Irion served as project manager on a technical assistance assignment for CETA Prime Sponsors in ETA Region I. This effort focused on all financial management-related operations of the sponsors, including financial systems, fiscal and accounting procedures, obligation and cash controls, Federal reporting, subrecipient monitoring, audit resolutions and closeouts, independent monitoring operations, and property management. Specific activities performed included:

- Identification and prioritization of financial management deficiencies and problem areas of Prime Sponsors through a review of their financial operations and procedures
- Development of Prime Sponsor-specific corrective-action plans to ensure effective and efficient financial management operations
- Provision of technical assistance and training to Prime Sponsor staff in the implementation of corrective-action measures

He served as project manager on an assignment to develop improved budgeting techniques for the allocation of certain administrative funds to SESAs. The funding model developed has been used by ETA to allocate funds to SESAs for FY 1981 and FY 1982. Major tasks in this assignment included:

- Developing alternative bases for budgeting indirect costs used to finance administrative, staff, and technical functions and nonpersonal service costs
- Identifying classifications through which these costs can be segregated and measured
- Formulating statistical models that explain resource levels
- Implementing fund allocation strategies

Mr. Irion has also provided accounting and financial management technical assistance to both the Illinois Bureau of Employment Security and the District of Columbia Department of Labor. During these assignments, he has worked with client staff in the design, documentation, and implementation of more effective financial information flows and processes and has provided on-the-job training to financial management and fiscal staff.

Mr. Irion has also been involved in an assignment for ETA to provide support in the development and implementation of recommended changes to the State Employment Security Agency accounting system. Specifically, his responsibilities included:

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- Development and presentation of several financial management seminar packages on the use of the SESA accounting systems as a tool to accomplish management functions. The audience for these training seminars included National Office staff, Regional Office staff, State Agency program managers, and cost center managers.
 - Preparation of an accounting and financial management manual documenting procedures and instructions supporting the SESA accounting system
 - Design of a review and assessment guide to be used in the evaluation of all aspects of State Agency fiscal operations and participation in the conduct of the evaluations
 - Preparation of a handbook providing instructions and methodologies by which SESAs can account for costs incurred in the operation of Comprehensive Employment and Training Act programs
 - Development and presentation of a training seminar package conveying changes and improvements made to the SESA Accounting System given to Regional Office and State Agency accounting, and design and writing of a brochure emphasizing the importance of accurate time reporting to be distributed to SESA staff in all states
 - Support in the development of a financial management seminar given to Work Incentive Program staff at the Regional Office and State levels

For the State of Alaska, Mr. Irion prepared user documentation and training materials for an automated budget system being developed and implemented for all the State departments.

Earlier, Mr. Irion participated in a project conducted for the Data Management Work Group, Employment and Training Administration, to design a training package conveying information system concepts and techniques to CETA program managers.

For the Department of Housing and Urban Development, Mr. Irion has participated in two separate assignments in support of the implementation of an automated Mortgage Insurance Accounting System. The first is the design of forms and the revision of existing forms necessary for processing system input and output information. Second is the development and delivery of training for HUD staff during system implementation.

Research, Development, And Evaluation

Mr. Irion was project director and a senior technical analyst for a survey to collect information on the post-program employment and training experiences of former Job Training Partnership Act (JTPA) participants throughout the Commonwealth of Virginia. Telephone surveys were conducted with approximately 8,500 Title II adults and welfare adults and Title III dislocated workers.

Mr. Irion served as the deputy project director on a U.S. Department of Labor research study of the uses of reemployment services by long-term dislocated workers. Telephone surveys are being conducted on the characteristics and reemployment experiences of 2,200 Unemployment Insurance claimants from a sample of 10 States. In-person interviews also are being conducted with Unemployment Insurance, Employment Service, and Job Training Partnership Act (JTPA) program officials at State and local area levels to assess current linkages that exist among programs for referring dislocated workers to reemployment services.

Recently, Mr. Irion served as project manager and principal author of a U.S. Department of Labor report that analyzed the relationships among performance, workload, and administrative staff resources in the Unemployment Insurance program. For this study, an automated, national database was created and analyzed to assist the Department in its deliberations on two policy initiatives: (1) to improve the adequacy and equity of financing

the administrative costs of State Employment Security Agencies (SESAs); and (2) to integrate quantitative and qualitative program measures and results in a Federal-State Unemployment Insurance program management system to reward efficient States and provide feedback information to less efficient States so that they can implement corrective actions to improve their performance.

Concurrently, Mr. Irion was the project director of a Department of Health and Human Service task order to produce a databook pertaining to current issues about the elderly population and retirement. The *Databook On The Elderly 1987* is directed toward both policymakers and analysts and covers a broad range of topics including sociodemographic characteristics, health, and economics.

Mr. Irion previously served as a senior technical analyst on three research and evaluation studies for the Department of Labor, Employment and Training Administration (ETA). He was Deputy Principal Investigator for an assessment of the implementation of the Job Training Partnership Act (JTPA) Title V Wagner-Peyser amendments. In this capacity, he participated in all aspects of the study involving research design, development of data collection instruments, conduct of site visits to State and local Job Service and JTPA agencies, and analysis of the data. Concurrently, he was senior analyst on a process study of the Job Corps program and designed data collection instruments, conducted site visits to Job Corps centers, synthesized findings, and analyzed process findings. Additionally, Mr. Irion was senior cost analyst for an impact study of the Targeted Jobs Tax Credit (TJTC) Program. His specific responsibilities include designing cost-effectiveness data collection strategies, synthesizing data, and analyzing results.

Mr. Irion served as project manager of an indefinite quantity contract to conduct research and development in Job Service programs for ETA. Three separate studies were performed under this contract.

- Mr. Irion was project manager on an ETA task order assignment to evaluate the revised Interstate Job Bank System recently implemented. The purpose of the evaluation task order was to assess the process, effectiveness, and costs of procedures designed to increase the utilization of the interstate clearance process as operated among State Employment Security Agencies and their local Job Service offices. Mr. Irion's responsibilities included formulation of an evaluation framework and research plan, specification of data requirements, design of data collection and work measurement instruments, collection of data, and development of findings and results.
- Concurrently, Mr. Irion was principal investigator on a quick response process evaluation study of the FY 1983 Summer Youth Employment Program (SYEP). This study focused on a qualitative assessment of the progress, problems, strengths, weaknesses, and benefits of the SYEP. He directed a team of 11 field researchers who visited 14 jurisdictions within 5 ETA regions for purposes of observing operations and interviewing CETA program, Private Industry Council, and Job Service officials. Interviews with over 40 SYEP work site supervisors and 86 SYEP enrollees were also conducted.
- On a related task order assignment, Mr. Irion served as a senior analyst and field research associate to study the results of the Targeted Jobs Tax Credit (TJTC) program for summer youth. This study assessed the implementation, utilization, and achievements of the program.

Mr. Irion was project manager on a research study to develop a pilot system for estimating the cost of providing various services to special applicant target groups of the U.S. Employment Service. His activities on this assignment included the following:

- Identification of cost information needed by ETA in negotiations for program resources, budgeting of program funds, and monitoring of program operations
- Analysis of existing automated cost and statistical reporting systems and specification of data elements that were used in a cost estimating model

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- Development of a methodology for collecting a sample set of statewide and local office data through on-site data collection and work measurement studies

Mr. Irion served as project manager on a study to develop and demonstrate improved methods for obtaining follow-up information on Employment Service applicant referrals and placements. Activities on this assignment included:

- Developing, implementing, and testing potentially superior follow-up systems
- Analyzing test data obtained during demonstration projects
- Formulating recommendations for alternative follow-up activities

In addition, Mr. Irion participated in the collection and analysis of data, via on-site reviews, to determine and evaluate alternative Employment Service Automated Reporting System (ESARS) data validation methodologies.

Mr. Irion was previously involved in a study for the Department of Labor, Employment and Training Administration, to conduct a cost and economic analysis of CETA decentralized programs. The purpose of this study was to analyze, from a cost perspective, the expenditures and related enrollments of CETA decentralized programs. Specifically, Mr. Irion's responsibilities included:

- Development of standardized definitions of program activities and cost category operations within these activities
- Collection of background material on Prime Sponsors who were visited
- Development of alternative methodologies to gather data from the various accounting and participant tracking systems maintained by CETA Prime Sponsors
- Coordination of the collection and analysis of cost and enrollment information from 49 Prime Sponsors

Facilities Management, Transition, And Operations

Mr. Irion has served as manager or lead analyst on various facilities operations projects for the Federal Government. His responsibilities have included analyzing contract specifications; developing and implementing quality control and staff training plans; hiring and training of staff; developing personnel policies and procedures manuals; implementing staff scheduling and cost control systems; and overseeing operations from both performance and cost perspectives. These assignments have necessitated working directly with Government project officers, quality assurance evaluators, and contracting officers.

Mr. Irion currently has corporate oversight responsibilities for the operations of a photographic records center under contract with the Department of Defense. The records center is the official repository for in excess of 1.2 million U.S. military photographs. His responsibilities have included contract start-up activities, design and implementation of an automated records management, production control, and reporting system, as well as ongoing operations, procurement, and personnel management.

For 7 years, Mr. Irion provided corporate oversight to the National Oceanic and Atmospheric Administration's Publication Distribution Center in Rockville, Maryland. In this capacity, he directed the original transition from a Government-run facility to a contractor-operated facility. Subsequently, he was directly responsible for the performance of the on-site operations supervisor and staff, as well as for the overall operations of the contract.

In addition, Mr. Irion participated in transition or phase-in activities of the following projects: an assignment for the Patent and Trademark Office to develop a customer order fulfillment system and fulfill requests for U.S. Patent and Trademark documents; a project for the National Institute of Occupational Safety and Health to prepare scientific data for submission to the NIOSHTIC scientific database; and the operation of the Central Forms Warehouse for the Department of Agriculture.

Auditing Experience

Prior to joining Macro Systems, Inc., Mr. Irion was employed by Arthur Andersen & Co. as a Senior Auditor in charge of commercial audits for clients including hospitals, financial institutions, retailers, service industries, and associations. His responsibilities in conducting the audits included: preparation of audit work programs; conduct of annual reviews of financial statements; analysis of accounts; preparation of reports, summarizing the client company's financial condition, with recommendations and comments for the company's consideration; and supervision of staff auditors.

JoAnn Kuchak

Education

School	Degree	Area of Concentration	Date
University of Pittsburgh	Educational Specialist Diploma	Educational Research	1973
University of Pittsburgh	M.A.	Educational Research	1973
Marywood College	A.B.	Education and Mathematics	1971

Employment

Employer	Title	Dates
Macro Systems, Inc.	Vice President	1990-
Applied Management Sciences	Vice President	1979-1990
Applied Management Sciences	Division Director	1977-1979
Applied Management Sciences	Research Analyst, Technical Manager	1974-1977
University of Pittsburgh, Arsenal Family and Children's Center	Research Intern, Research Coordinator	1972-1974

Work Experience

Ms. Kuchak's professional capabilities include knowledge of food assistance, higher education, child care, and other Federal assistance programs and expertise in fraud and abuse investigations; program evaluation and survey research including national sampling and estimation; national, large-scale data collection and data management; analysis involving estimation and hypotheses testing; and policy analysis reporting.

Ms. Kuchak's assignments at Macro include:

- Project Director of WIC Dynamics, a 2-year project designed to examine the effects of infant formula rebates and other external factors on the operation and delivery of WIC services in local WIC agencies. The study is comprised of three major components: a survey of 800 local WIC agencies, to determine the effects of formula rebates and other legislative, regulatory and policy actions; case studies at 32 local agencies, to assess the nutrition education process and to obtain a detailed picture of the integration of WIC with health care services; and a quasi-experimental design and evaluation of computer assisted nutrition education demonstrated at local WIC clinics.
- Project Director of evaluation support for child nutrition demonstrations. Congress mandated FNS to conduct three demonstrations to increase participation of low income children in the Child and Adult Care Food Program and other child nutrition programs. These include a demonstration to determine the most effective means of delivering year round nutrition assistance to children in homeless shelters;

demonstrations of three strategies to increase participation of children cared for in family day care homes located in low income areas; and demonstrations of the effects of altering center eligibility criteria on increasing participation of low income children, improving the nutrient quality of meals, and reducing costs. This project is utilizing quasi-experimental design and case study methodologies to assess contextual, process, impact and costs.

- **Officer in Charge of the HUD Quality Control Project**, a multi-year evaluation of the accuracy of rent determinations in Section 8 rental assistance programs. This project entails the selection of a nationally representative sample of tenants, the collection of income verification data to determine compliance with HUD regulations and guidebooks, and analysis of data to estimate rates of error and dollar loss attributed to inaccurate rent determinations. The project also includes providing HUD regional offices with support staff to pilot test the Control File Subsystem of the Tenant Rental Assistance Certification System (TRACS).
- **Officer in Charge of two projects to support the information needs of the Energy Information Administration.** Macro is providing statistical support to the Petroleum Supply Division by maintaining sampling frames and selecting samples for a variety of surveys to retailers of petroleum-based products. In a second project, Macro staff are providing systems development and maintenance support for key EIA information systems. Activities include efforts to improve software efficiency and effectiveness and the conduct of quality control analysis of software and survey data.

Her previous responsibilities included serving as the project director of corporate officer in charge of the following projects:

Food Assistance Programs

- **WIC Vendor Management study for the USDA Food and Nutrition Service.** This project utilized mail and personal interviews to examine State-level management of the vendors who participate in the supplemental feeding program for Women, Infants and Children. A major focus of the study was describing and documenting the procedures that states use to monitor vendors suspected of abusing the WIC Program.
- **WIC Vendor Issues study for the USDA Food and Nutrition Service.** This \$1.2 million project includes the design and conduct of an empirical study to assess the nature and scope of vendor abuse in the WIC program. It consisted on an examination of WIC regulations to identify potential sources of abuse, the design of a compliance buy methodology to detect overcharging and other forms of abuse, and the conduct of compliance buys in a nationally representative sample of vendors in order to estimate within acceptable statistical levels of confidence the total Federal dollar loss due to various types of vendor abuse. This project involved the management of a major subcontract with Pinkerton's Investigative Services to provide a national network of investigators capable of simulating the purchase behaviors of WIC participants and the complexities of working with more than 30 states to obtain participant identification documents and food instruments. A secondary goal of the study is to test the effectiveness of state-level high risk vendor selection criteria and to develop new criteria through multivariate models that are effective in isolating vendors likely to abuse the WIC program.
- **Three-year project to assist State agencies in demonstrating and evaluating innovative strategies to prevent and detect errors and fraud in the Food Stamp Program.** This task order contract included the development of an on-site assistance program as well as the design and conduct of demonstration evaluations. Demonstrations were diverse and included media campaigns, performance

monitoring systems, automated application/recertification systems, staff interventions (including quality circles), and error-prone profiles.

- **Two-year, \$1.6 million combined evaluation and demonstration of quality assurance procedures for the School Nutrition Program's meal application process sponsored by the Food and Nutrition Service (FNS) of the U.S. Department of Agriculture (USDA).** In response to congressional requests, FNS undertook a major initiative effort to upgrade the quality of the school nutrition application process to reduce the prevalence of misreporting, fraud, and error. This project involved an exploratory study of three trial application improvements to examine error sources and causes. A demonstration of nine different corrective action strategies in a nationally representative sample of school districts followed.

Key features of this project were its scope and magnitude: more than half a million meal beneficiaries were involved in the demonstration and 50,000 were involved in the evaluation. The demonstrations included application improvements; various methods of verification, including tape matches with State Food Stamp, Welfare, and Employment files; and development and test of an error-prone model. Data were gathered from record reviews, mail surveys, interviews, and in-home audits. Multivariate economic and statistical techniques were used to provide USDA with optimal corrective action strategies that were cost-effective and feasible within the school meal operating environment. The study findings resulted in a major change to program regulations, which was projected to save the program more than \$200 million.

- **Development of a turnkey system for surveying food purchases by school districts and other institutions that receive commodities from the Food and Nutrition Service.** This \$800,000 project involved the establishment of a nationally representative panel of school districts and an ancillary sample of other public institutions, the development of survey forms to record food purchases, and the processing of thousands of food purchase transactions. The database developed in this project was compatible with USDA's Commodity Conversion System, which equates processed food items with agricultural commodities. The data were used to evaluate USDA's private-sector National Commodity Processing Program to determine whether the program was achieving its goal of increasing the use of dairy products in public meal programs and whether other suppliers were being displaced by the program. USDA continued to use the panel survey to monitor the impact of USDA meal programs on the agricultural economy.

Child Care Programs

- **Study of the degree to which the Child Care Food Program (CCFP) is reaching its target audiences.** An analysis of secondary sources, including the Survey of Income and Program Participation and the National Longitudinal Study of Youth, the study utilized logit analysis techniques to model factors influencing choice of child care, and compared child care usage patterns among all low-income households with those of CCFP participants. The purpose of the study was to identify the degree to which low-income households are not being served, and to make recommendations about how to improve the delivery of benefits to this population.
- **Development of print and video training materials to enhance the Family Child Care Training Package for the Department of the Army.** This project entailed the integration of Army requirements with existing child care curriculum used in the private sector.

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- **Provision of data collection services for a nationwide study of the Child Care Food Program (CCFP), under a subcontract to the Food and Nutrition Service of USDA.** The goal of this project was to develop a descriptive database on CCFP benefits, participants, and service providers. Data were gathered on the characteristics and operations of participating facilities during in-person interviews with over 200 day care center directors and family day care home providers in eight States. In addition, computer-assisted telephone interviews were conducted with 2,000 parents of children in CCFP-participating facilities to determine income, household composition, child care arrangements, and reasons for selecting a particular mode of child care and the specific facility.
 - **Demand survey of day care services for school age children.** This \$300,000 project involved an assessment of the factors influencing parents' perceived need for child care services for school age children and how the need was being met. Data for this project were gathered through computer-assisted telephone interviews with a representative sample of 1,000 parents with school age children in Wisconsin and Virginia. This was followed by personal verification interviews with a subsample of these parents, their children, and the service providers available to them. The study provided a basis for formulating policy in day care for school age children, with major emphasis on economic issues and alternatives. The study was performed for the Department of Health and Human Services' Administration for Children, Youth, and Families.
 - **Supply and demand survey of child care services in Montgomery County, Maryland.** In this study, child care encompassed traditional care as well as programs such as Head Start and community recreational activities. This project examined the factors that influence parents' demand for child care services and the congruence between supply and demand. One thousand parents reported on current and anticipated needs, preferences, and usage. In addition, 400 providers reported on curricula, capacity, outreach, and location. The study results indicated a substantial number of latch-key children and major imbalances between supply and demand. The study also revealed very little employer involvement in child care. Montgomery County used the study findings to determine the role of county government and county business in creating a better balance between supply and demand.

As research coordinator and research intern for the University of Pittsburgh's Arsenal Family and Children's Center, Ms. Kuchak's responsibilities included the following activities:

- Technical assistance and training in evaluation to day care agencies in the Pittsburgh area concerning internal programs and the use of videotaping in the evaluation of child-adult and child-child interactions
- Summative evaluation of 16mm teaching films on children's play behavior used for instructing graduate students and professionals in human development
- Coordination of a multidisciplinary group (clinical psychology, child development, child psychiatry, play therapy, and education research) in the development of Likert scales to measure children's play. Independent play activity units were identified through an empirical content analysis of videotapes of children in group and individual play settings.
- Discussion leadership at the 1974 University of Pittsburgh Conference, "Child Care Training for a Changing World"
- Review, approval, and coordination of all research activities occurring at the center and supervision of graduate students' activities

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- Formative and summative evaluations of the Pittsburgh Educational Professions Development Act Project, a graduate program in child development. Evaluation included development of objectives, measures of processes used to convey objectives to students, methods of assessment of student progress, and postgraduate followup.

Preschool, Elementary, and Secondary Education Programs

- **Management and Conference Support to the National Assessment Governing Board.** The Department of Education sponsors the National Assessment of Educational Progress to develop and use criterion-referenced tests to measure the achievement of elementary and secondary education students in the United States. The Governing Board sets policy, selects areas for tests, develops test objectives, and disseminates results. Members of the Board include Federal managers, state legislators, content and methodological experts, and representatives of the education constituencies. Assistance provided ranges from conference and meeting support to substantive support in test development.
- **Study of handicapped Head Start children to explore identification and assessment procedures resulting in the speech impairment classification.** The project used computer-assisted telephone interviews and record reviews to examine how practitioners make assessments. A major study product was a manual for Head Start directors and handicap coordinators for identifying and assessing handicapped children as speech impaired.
- **Three-year national survey of procedures utilized by local schools to prevent the erroneous classification of handicapped children and to determine the effectiveness of those procedures.** This \$1 million study required population estimates at a national level; 1 year was spent developing instrumentation, pilot test procedures for sample selection and data acquisition, and training procedures for field personnel. The second and third years of the study were involved with data collection and analysis activities and case studies in approximately 10 percent of the original sample. A quasi-experimental longitudinal design permitted determination of the effectiveness of these procedures.
- **Two-year study to verify procedures for handicapped children focusing on the referral and assessment system that identified and placed children in special education programs and on factors at the secondary level that influenced the delivery of services to this population.** This \$100,000 study utilized an exploratory case study approach involving site visits to schools to identify possible factors and a more in-depth interview procedure to verify the impact of those factors.
- **Development of a curriculum and traffic safety program for preschool children and their families.** This project, funded at \$650,000, included analyses of related literature in traffic safety curricula, human development theory, and traffic accident data to develop countermeasures targeted at reducing the specific kinds of accidents involving young children. Major formative evaluation efforts supported the curriculum development effort.

Higher Education Programs

- **Development of a Self-Evaluation Tool for the Centers for Excellence.** This project is supporting the Health Resources and Services Administration in translating legislative requirements into a self-assessment tool to be used by the Centers for Excellence. The instrument development approach is combining the expertise of project staff evaluators with representatives of the CFE programs, and an

expert panel representing historically black colleges and universities. The evaluation covers a wide range of performance indicators including fundraising and financing, quality of faculty, student selection, and curriculum.

- **An Assessment of Factors Influencing Medical School Enrollment of Students from Historically Black Colleges and Universities.** This project is assisting the Health Resources and Services Administration in meeting the health needs of minorities by expanding the supply of minority physicians. The focus of the project is to obtain an understanding of the strategies employed by minority schools that are successful in their undergraduate science and pre-medical education programs, the limitations of minority schools that are less successful, and the criteria used by medical schools to select and screen minority applicants. These findings in concert with an analysis of MCAT scores and advice from a panel of experts will make recommendations to HRSA for improving rates of matriculation in medical schools by black students.
- **Analytic support to the Department of Education's Postsecondary Analysis Division in the Office of Planning, Budget and Evaluation.** This project included literature searches and analyses to support budget preparation, statistical analysis, and econometric modeling. Sample tasks included the development of a model to estimate at what point the Income Contingent Loan Program could become solvent, under various policy scenarios; simulating the impact of policy changes on Federal costs in the Pell Grant Program; and examining financing alternatives available in the private sector to fund higher education facilities and student loan programs.
- **Survey methods pilot test for the National Postsecondary Student Aid Survey.** The study examined the efficacy of mail, telephone, and in-person data collection methods, as well as methods for updating respondent location data for out-of-school Guaranteed Student Loan borrowers.
- **Design of a survey of defaulters in the Health Education Assistance Loan (HEAL) Program,** including sample selection, instrument design, pilot testing and OMB clearance, and analysis plan. In response to congressional mandate, this survey was designed to determine the major causes for default.
- **Conduct of a survey of Health Education Assistance Loan (HEAL) defaulters.** This project surveyed all HEAL defaulters through mail and telephone methodologies. The survey revealed that administrative changes could reduce default substantially, but that the earnings potential in some professions was insufficient for borrowers to meet their obligations. The study results were presented to Congress and are being used to alter the program through regulation and administrative procedures.
- **A quality control study of payment errors to lenders and guarantee agencies in the Guaranteed Student Loan Program.** This national evaluation involved the development of a comprehensive audit review guide for assessing the accuracy of payment requests, relative to specific documentary requirements in GSL portfolios. The project also involved an assessment of the Department of Education's automated and manual processing systems. A total of 10,000 individual loan files were reviewed at 400 lenders and 35 guarantee agencies. The study produced nationally reliable estimates of payment error in the GSL program, and formulated actions to improve problem areas.
- **Quality control analysis of programs sponsored by the Office of Student Financial Assistance (OSFA).** This \$300,000 project consisted of three basic studies involving statistical analysis of Basic Grant applicant and recipient data and a tape match with the Internal Revenue Service. The major thrust of these analyses of secondary data were (1) to determine the impact of recent managerial and policy initiatives in terms of changes in applicant behaviors and cost savings attributed to reduced award amounts and (2) to monitor the overall scope and nature of abuse in the Basic Grant program.

The remainder of this project consisted of rapid turnaround task orders exercised when OSFA was responding to congressional inquiries. The tasks required simulated effects of programmatic changes or evaluation of the impacts of previous changes. The project included statistical projection and simulation of the effect of programmatic changes under consideration. More than 10 million individuals apply to federally funded student grant, loan, and work-study programs. Records of both applicants and institutions were the subject of these computerized analyses, which involved the application of a variety of techniques ranging from descriptive statistics to multivariate analysis and econometric modeling.

Health and Welfare Programs

- **Development of a Data Base and Expert System for Valuing Personal Injury Claims for a law firm.** This project provided assistance to a major Baltimore law firm that represents in excess of 2,000 Dalkon Shield claimants. Working closely with the principals in the firm, the factors relevant to determining the value of case settlement were identified and translated into an automated recordkeeping and evaluation system. Medical records abstractors were selected and trained to review case files, including up to 12 years of medical records, and to enter the pertinent information into the database via an on-line PC network. The system is being used to prepare claims for submission to the Court-appointed Trust that is making awards for injuries.
- **Survey of Ethnoviolence conducted in 1989 to provide reliable national estimates of the incidence and nature of ethnically-based violence in America.** This survey was performed using a random digit dial sample clustered in areas of the country with higher concentrations of minority residence. Computer-assisted telephone interviews were used to contact in excess of 10,000 households for screening and data collection.
- **Cost evaluation of implementing Federal regulations governing employment of the handicapped.** The project was conducted with the American Management Association and included a representative sample of employers who reported on costs to recruit and employ handicapped individuals. A quasi-experimental design was developed to compare handicapped and nonhandicapped workers' performance, productivity, longevity, attendance, and insurance claims expenses.
- **Demonstration and evaluation of commercial credit reports as a corrective action to reduce errors in HHS' Aid to Families with Dependent Children (AFDC) Program.** The demonstrative component included development of procedures for use by a sample local AFDC office in three States, training local office staff, and providing demonstration implementation assistance. The evaluation component included an assessment of the impact of credit reports on AFDC errors, and analysis of short- and long-term costs and benefits. These evaluation results revealed that credit reports were an effective corrective action tool in selected settings.
- **Multiyear task order project to assist HHS' Health Care Financing Administration (HCFA) in conducting Medicaid quality control reviews.** Applied Management Sciences provided HCFA with a national network of quality control reviewers that could be used to augment State capacities to conduct their own quality control reviews. Quality control reviews included personal interview-audits and third-party checks to verify applicant-reported and State-approved information used to establish eligibility for Medicaid benefits.
- **Assessment of the degree to which students in the health professions are "at risk" of defaulting on federally insured loans, based on the hypothesis that in aggregate, students were borrowing more than their projected earnings would allow them to repay.** The project required the development of an

empirical definition of "at risk" as well as econometric forecasts of borrowers likely to be at risk during the next 10 years. The econometric models were developed and validated on the basis of a limited primary data collection effort. The end product of this project was the development of a system for the Bureau of Health Professions in the Department of Health and Human Services (HHS) to monitor borrowers at risk.

- **Evaluation of income (re)certification procedures and impact in HUD's major multifamily rental assistance programs, which resulted in a quality control system for ensuring correct rental assistance payments.** This \$1 million study involved two subcontractors in on-site large-scale data collection at a representative sample of 500 housing projects. It included personal interviews and record reviews from 496 managers and 23,805 tenants. Major features of this project included a large data management/data processing effort to build the analytic files and perform tape matches with the Internal Revenue Service and Social Security Administration as well as to apply multivariate analysis techniques for creating indices and profiles to predict administrative quality factors. This project resulted in major changes in HUD's administrative policies and procedures in managing its rental assistance programs.
- **Development of a statistical model to identify individuals erroneously receiving disability benefits from the Social Security Administration (SSA).** This project adapted an error-prone modeling methodology developed previously by Applied Management Sciences to meet the specific requirements of SSA. It involved interviews with experts responsible for reviewing decisions made by Administrative Law Judges to identify factors associated with error-proneness; abstracting the needed medical, demographic, and financial data from voluminous beneficiary files; and applying multivariate techniques to identify the factors most effective in discriminating erroneous decisions from correct decisions. The study findings were used by SSA to streamline their oversight and review activities, which resulted in greater staff efficiency and cost savings to the government.
- **Measurement assessment of the degree to which potential vaccine recipients comprehended information forms designed by the Centers for Disease Control to alert recipients or their guardians of interactive and side effects of vaccine drugs.** This \$110,000 project involved the design and pilot test of instruments to assess variations in clinic procedures and patient's actual and perceived comprehension of the drug information forms. The project, which revealed that the reading level of the forms is generally at the high school level, identified clinic, patient, and form features that detract from the patient's capability to comprehend important information. Observational, test, and interview data were gathered from approximately 560 patients located at six sites.
- **An assessment of the impact of collaborative research methods in restorative dental materials.** Sponsored by the National Institutes of Health, this project examined the impact of different funding mechanisms on research output and product development. It utilized bibliometric analyses, survey research, and patent analyses.

Loans and Finance Programs

- **An Assessment of Strategies Employed by the Private Sector Prevent and Reduce Facility Loan Defaults and Delinquencies.** Two projects were conducted to support the Health Resources and Services Administration by examining the legal requirements of loan agreements made by HRSA and HUD with hospital facilities. Working with Powell, Goldstein, Frazer and Murphy, a sample of loan agreements were reviewed to first identify HRSA's legal position and the range of actions available to HRSA to oversee delinquent accounts. A second effort relied on interviews with private lenders to explore tools employed by the private sector in managing their loan portfolios.

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- **Survey of Private and Public Pension Plans' Investments in Mortgage-backed Securities for HUD's Office of Policy Development and Research.** This project developed nationally representative sample panels of public and private pension plans to inquire about the amount and proportion of investments in mortgage-backed securities. Complexities in the surveys include distinguishing the investments of particular plans when investments are managed simultaneously for several plans, and in determining the proportion of investments in mutual funds that are in mortgage-backed securities.
 - **Support to the Treasury Department in coordinating Reform 88 initiatives in loan granting and debt collection.** This task order contract involved two major activities: (1) providing technical support to a steering committee composed of assistant secretaries representing major Federal loan programs, and (2) developing and evaluating the application of private-sector credit scoring and risk analysis techniques to Federal loan programs. Demonstrations were conducted for several agencies, including the Economic Development Administration and the Small Business Administration. This project required knowledge of Federal loan programs, corresponding programs administered by private sector lenders, and techniques and resources routinely used by the banking industry in managing individual and business loan portfolios.
 - **Review of administrative and accounting procedures used by State housing agencies responsible for administering Section 236(b) Rental Assistance Funds.** This project was designed to help the Office of State Agency and Bond Financed Programs in the Department of Housing and Urban Development (HUD) with the development of strategies to prevent and control losses of Federal funds attributed to weak administrative and reporting procedures at the State and local levels. The project used a case-study and audit methodologies to document organizational structure, management practices, recordkeeping, and reporting systems. The project produced a set of recommended procedural changes and a performance monitoring system designed to achieve better fiscal management of this program.
 - **An assessment of lender and Guarantee Agency collection strategies in the Guaranteed Student Loan Program.** This project developed a unique 8-year longitudinal database from the loan portfolios of nine States and 1,000 lenders. Data were also gathered from servicers and secondary markets. The study results revealed that a substantial component of default could be reduced by relatively inexpensive legislative changes. The study results were used by the Assistant Secretary for Postsecondary Education in reauthorization hearings.
 - **Analysis of the allotment of Federal vocational education funds whose purpose was to develop and suggest alternative methods for allocating Federal vocational education funds that met States' needs for such funds.** This \$100,000 project relied on legislative analysis, needs analysis, and advice of a technical panel to develop alternate allotment mechanisms. Based upon these results, computerized simulations were made to test the effects of various formulae on recipients of vocational education funds.

Other Survey Analysis and Quality Assurance Projects

- **Survey of automobile dealerships for the National Automobile Dealers Association.** This project used mail survey techniques to elicit opinions from the membership to help focus the policy directions of the association in dialogues with manufacturers. Survey results are presented as profile booklets with PC-generated graphics that the Association uses in presentations to manufacturers.

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- **Task order contract to provide litigation support to the Department of Education's Office for Civil Rights.** This involved providing statistical, programming, and subject matter expertise in identifying issues, preparing data, conducting analyses, and providing expert testimony.
 - **Survey of shortages of scientific and engineering personnel for the National Science Foundation.** This was a panel survey of private sector employers designed to provide rapid responses to questions about the demand for scientists and engineers, and included a blue ribbon panel of major corporations to discuss findings with the Director of OMB. The survey and panel results were used by President Bush's transition team in formulating policies to strengthen the supply of U.S. scientists.
 - **Quality control assistance to the Internal Revenue Service.** This included an examination of the effects of changes in the Individual 1040 Processing System, which involved development of a PC-based model of the 1040 pipeline, and estimates of line-specific errors on the 1040s.
 - **Demonstration and evaluation assistance to the Department of Labor in implementing its new Core QC Program.** This project involved evaluating the impact of new corrective action strategies being considered by DOL, and in demonstrating a new quality assurance monitoring system. This system included on-line telecommunications with State Offices of Employment Security.

Ms. Kuchak's previous position as director of Education Systems involved technical and managerial responsibilities for evaluation and management studies assigned to the division. Her major responsibility was directing the validation of student- and parent-reported information on the Basic Grant form, a 3-year project funded at \$2.3 million. The purpose of the project was to implement and to refine procedures for detecting and controlling misreporting. Ms. Kuchak also managed subcontracts with the American College Testing Program in excess of \$300,000 and supervised staff exceeding 30 persons in the following areas:

- Student, parent, and institutional technical assistance via letter, telephone, and conference presentations concerning validity of grant application data and award overpayments for more than 12,000 BEOG recipients
- Development and maintenance of three major automated support systems that controlled the flow of 100,000 annual communication transactions and generated analysis of the impact of validation and overpayment recovery efforts
- Development and enhancement of a model used to predict BEOG misreporting
- Design and conduct of several analytic studies involving different BEOG and IRS income data files, including a statistical comparison of BEOG and IRS income data, an analysis of the BEOG application correction processing system, the development of analytic profiles of supplemental filers and zero-income applicants, and an impact analysis of validation conducted at the local institutional level.

Ms. Kuchak's other responsibilities in the Education Systems Division included the following assignments:

- **Technical direction of the \$375,000 ESAA Viewership Survey conducted for the Office of Education.** Ms. Kuchak supervised staff in the development of modular instruments for administration to more than 15,000 respondents at the first grade through adult comprehension levels in school and home settings and the identification of minority target audiences within station coverage areas,

interviewer training, data collection, and analysis. Significant aspects of this study included the logistical difficulty of designing site-, time-, and data-specific data collection instruments and completing data collection within 6 months of contract award.

- **Design of a \$1.5 million study of Federal, regional, and local management of the Basic Grant and Campus-Based student aid programs.** The study design included a comprehensive assessment of the Federal management process--the roles of the key actors, their capacity to implement the legislation, and the contextual factors influencing how thoroughly the intent of the authorizing legislation was carried out. Ms. Kuchak's ongoing role as internal advisor included technical review of products and development of a conceptual and operational framework for reviewing the management practices at the Federal and local levels.
- **Technical assistance on a project for Women's Educational Act grantees.** She advised and participated in conference workshops aimed at improving program evaluation skills.
- **Technical assistance on an \$80,000 project to enhance a model for estimating BEOG participation rates.** Ms. Kuchak provided technical review of project products and advised project staff in the historical nature of BEOG data files and applicant characteristics and behavior.
- **Principal investigator of a \$300,000 contract to develop quality assurance procedures for the Basic Educational Opportunity Grant Program.** Concurrent with performing analytic studies, Ms. Kuchak was responsible for overseeing the design of procedures for selecting applicants for direct contact validation, the development of individual validation procedures, and the specification of procedures for recovering overpayments.
- **Participant in data collection, analysis, and development of case studies for the Elementary-Secondary Federal Data Core Feasibility Study conducted for the National Center for Education Statistics.** This project, designed to assess State and local education agencies' capacities to fulfill Federal reporting requirements, involved site visits and a mail survey to 50 State agencies and 150 local agencies.
- **Data analyst on the EDSTAT standardization project for the National Center for Education Statistics,** which involved assessments of the quality of more than 100 OE surveys and standardization of the automated data files for those meeting specified standards of quality.

Other Professional Activities

- Ms. Kuchak has been quoted in *The Washington Post*, *Los Angeles Times* and other national periodicals, and has appeared on national television to discuss child care issues.
- Advisory Board member for the Urban Institute and National Association for the Education of Young Children's 1989-90 National Survey of Child Care Consumers and Providers.
- Review panelist for grant applications submitted to the Department of Health and Human Services in the areas of Child Care and Aging.

Representative Publications and Papers

Literature and data base review, child care food program targetting study. 1989.

Quality control in the guaranteed student loan program. 1986. Invited presentation at the National Council of Higher Education Loan Program's National Conference, May.

A study of effective collection and servicing strategies in the Guaranteed Student Loan Program. 1986.

The results of a demonstration and evaluation of nine quality assurance strategies in USDA's school meal programs. 1984. Paper presented at the Evaluation Research Society Convention in San Francisco, October.

Income verification pilot project: Results of quality assurance evaluation. 1984.

A study of child care needs and demand in Montgomery County, Maryland. 1983.

School age day care study final report. 1983.

Income certification/recertification evaluation in HUD rental assistance programs: Stage II Report Series. 1982.

Analysis of Basic Grant application corrections process: Phase I report. 1979.

What to do when your project is ending and you haven't thought about evaluation. 1979. Women's Educational Equity Act Program Conference on Project Management and Evaluation, Washington, DC.

\$50 million of ESAA TV: Who's watching and why not? 1978. National Association of Educational Broadcasters National Convention, Washington, DC.

Analysis of 1978-79 validation efforts. 1978. National Conference on Basic Grant Validation, Denver, CO.

Report on Basic Grant pre-award validation impact. 1978.

U.S. Office of Education-sponsored research on the television series sponsored under the Emergency School Aid Act. 1977. National Association of Educational Broadcasters National Convention, Washington, DC.

Basic Grant validation study: Final report. 1976, 6 volumes.

EDSTAT standardization: Assessment of quality. 1974, 13 volumes.

Evaluation of the Pittsburgh Educational Professional Development Act Early Childhood Project. 1973. University of Pittsburgh.

Arsenal Family and Children's Center - Shady Lane School Play Scale Study: Final Project Report. 1973. Arsenal Family and Children's Center, University of Pittsburgh, PA.

Honors

Graduate Fellowship, University of Pittsburgh, 1971-1973

Professional Affiliations

American Society for Quality Control
American Evaluation Association

John W. Lathrop

Education

School	Degree	Area of Concentration	Date
University of Maryland	MGA Candidate	Corporate Human Resources Management	Current
Maxwell Graduate School of Citizenship and Public Health Syracuse University	M.A.	Public Administration	--
College of Wooster, Wooster, Ohio	B.A.	Public Administration	--

Employment

Employer	Title	Dates
Institute for Resource Development	Technical Director	1990-
University of Maryland	Director, Contracts and Special Programs	1988-1990
University of Maryland	Program Manager	1986-1988
Center for Creative Leadership	Program Manager	1980-1986
University of Maryland	Assistant Director	1978-1980
University of Maryland	Project Manager	1972-1978

Work Experience

Currently serving as technical director for Development Programs for the IRD, Mr. Lathrop is responsible for the development and delivery of professional training programs for government and private-sector clients domestically and abroad.

As director of special programs for the University of Maryland University College, Center for Professional Development, Mr. Lathrop was responsible for development and design of professional training programs for corporations, international governments, and associations. These projects received two national awards for programming excellence. Mr. Lathrop was responsible for all program phases; need assessment, proposal development, program evaluation, financial management, budget preparation and control, marketing and promotion, faculty selection, training, and evaluation.

Other projects included a management program for senior-level managers at the NISSAN Corporation, and implementation of an international training coordinators' program for C. Itoh Limited, Japan. Mr. Lathrop designed and conducted management training and computer science professional development programs for Department of Defense, Kingdom of Saudi Arabia, and conducted a management training program for a U.S. intelligence agency in Germany and England.

While at the University of Maryland, Mr. Lathrop was principal designer and program manager for a 10-day contract program that focused on the motivation and management of "knowledge workers" in a national security environment. The average evaluation ratings for this program are 4.6 on a 5.0 scale. Shorter versions of the program have been conducted for government agencies and other corporations.

Working with the Center for Creative Leadership in Greensboro, North Carolina, Mr. Lathrop initiated and completed contract negotiations which brought the nationally recognized Leadership Development Program to the University of Maryland. This program provides executive leadership training to organizations nationally and internationally. Mr. Lathrop managed this program for 3 years and taught several different modules in the program.

Mr. Lathrop established the first national, university-based consortial agreement between the University of California, Los Angeles, and the University of Maryland to swap state-of-the-art short courses. He is responsible for the award-winning "Industrial Robotics" course featuring leading experts in that field. Other projects developed by Mr. Lathrop include a 3-year, \$1.2-million Basic Health Surveyor Training Project with the DHEW Health Care Finance Administration, and Occupational Health Consultants training programs with HHS.

Judith A. Leibowitz

Education

School	Degree	Area of Concentration	Date
The American University and the NTL Institute	M.S.	Human Resource Development	1982
University of Maryland	B.S.	Education	1973

Employment

Employer	Title	Dates
Institute for Resource Development	Organizational Development Specialist	1986-
Arthur Young & Co.	Consultant	1984-1986
NTL Institute for Applied Behavioral Science	Program Manager	1981-1984
Human Resource Development	Independent Consultant	1980-1984
The American University and the University of Southern California	Training Specialist	1979-1980

Work Experience

Ms. Leibowitz has approximately 17 years of experience as a consultant, trainer, manager, and counselor. Currently, she is a senior organization development specialist with the Institute for Resource Development, Inc. Most of the work performed by Ms. Leibowitz focuses on organizational development, leadership and management training, team building, and training trainers and facilitators. Her clients have included Federal, State, and local government; private companies; and associations. Since 1986, Ms. Leibowitz has served as adjunct faculty at American University, where she advises students completing their graduate studies in organization development.

For the past 4 years, Ms. Leibowitz has been the project manager and trainer on a contract with the Navy Office of Civilian Personnel Management. Having conducted nine 2-week training sessions entitled, "Leadership and Management Development Program (L&MDP) for Functional Personnel Managers," she has trained approximately 225 Navy managers. In addition, she has designed and conducted three "Facilitator Training Courses." The facilitators work with core learning teams (CLTs) during the L&MDP.

In addition to OCPM, Ms. Leibowitz has conducted training for the Chief of Naval Operations (CNO), and has been working as a consultant at the Naval Surface Warfare Center (C-12 and U-40). For the CNO, Ms. Leibowitz has conducted the "New Managers Leadership Training Program" as well as the "Executive Development Program." For NSWC, she has conducted OD interventions that include team building, conflict management, individual coaching and counseling of both managers and staff, inter-group relations, organizational planning, and group redesign.

In addition to the Navy, Ms. Leibowitz has conducted training programs for corporations such as Westinghouse, Pillsbury, and Union Carbide. Stress Management," "Conflict Management," "Appreciating Differences Using the MBTI," and "Managing Change" are examples of programs she has designed and conducted.

Prior to joining IRD, Ms. Leibowitz was a senior consultant with Arthur Young & Company's Washington, D.C., office, where she consulted and/or provided training to clients of the company on a range of human resource issues. They include performance appraisal, management development, MBTI, and organizational change.

From 1981 to 1984, Ms. Leibowitz developed and managed conferences and training programs for managers, trainers, and consultants, while she worked as a project manager for the NTL Institute for Applied Behavioral Science. Prior to that, she worked as an independent consultant and trainer and was employed as a training specialist on a management training contract held by The American University and The University of Southern California.

Memberships

NTL Institute and the Organizational Development Network
Women in OD - 1984 conference planning committee
Chesapeake Bay OD Network - board member

Training

Beyond Conflict, Managing the Dynamics of Difference, the NTL Institute, 1986.
The Myers-Briggs Type Indicator, Otto Krueger Associates and the NTL Institute, 1984.
Human Interaction Laboratory, the NTL Institute, 1980.

J. Michael Livesay, Ph.D.

Education

School	Degree	Area of Concentration	Date
University of North Carolina	Ph.D.	Anthropology	1985
University of North Carolina	M.A.	Anthropology	1977
University of Tennessee'	B.A.	Anthropology	1972

Employment

Employer	Title	Dates
Macro International Inc.	Senior Researcher	1989-
S.E. Educational Improvement Laboratory	Program Associate for Information Management and Technology	1986-1989
Self Employed	Technical Editor	1985-1986
University of North Carolina, Institute for Research in Social Science	Project Manager	1982-1984
Policy Research and Planning Group, Inc.	Research Associate	1977-1982
National Institute of Education/University of North Carolina	Field Director of Research Project	1979
National Institute of Education/University of North Carolina	Research Assistant	1976-1977
UNC Carolina Population Center	NICHHD Training Fellow	1975-1977

Work Experience

Dr. Livesay has had experience as a project, program, and line manager. He has a background in social science and educational research and technology, and has special skills in qualitative research and quantitative methods.

For the Department of Education, Office of Special Education, Macro is performing an Evaluation of the Integration of the Technology for Instructing Handicapped Students (High School Level). As project director, Dr. Livesay has responsibility for the operational management of the project. This includes designing and supervising research tasks; implementing and evaluating a model of technology integration in high schools throughout the country; preparing the routine administrative reports needed for the project; and monitoring project activities. The project director identifies any deviations in project quality, schedule, budget, or anything else, and resolves these problems, involving the principal investigator as appropriate. Dr. Livesay also is responsible for replication of the model of technology integration in high schools, and for providing technical assistance to school sites during its planning and implementation.

Previously, he designed, developed, and directed the information management systems and division of a regional education laboratory; provided technical support and policy advice to a program in educational technology at a regional education laboratory; and identified needs, designed, and directed a program of technology transfer and technical services to university faculty and staff.

In addition, he conducted field research on implementation of pest management programs by extension service agents in rural North Carolina; established and developed technology assessment and social impact assessment programs for a nonprofit policy research group; and conducted 5 years of ethnographic, historical, and organizational research on social change and desegregation in a school district and community.

Selected Publications and Presentations

Livesay, M. 1978. Social impact assessment: Relevance and methods. Presentation to the U.S. Army Corps of Engineers, Wilmington, NC.

Livesay, M., and D.C. Clement. 1979. The organization and representation of social race relations in six desegregated schools. In *When schools are desegregated*, edited by Murray L. Wax, 39-58. Washington, DC: National Institute of Education.

Livesay, M. 1981. Social science research and community issues. Presentation to League of Women Voters Unit Meeting, Durham, NC.

———. 1982. Classification and legitimation of black americans in plural relations. Paper presented to American Ethnological Society, Lexington, KY.

———. 1983. Conflicts in school district leadership. Paper presented at the Anthropology Seminar, University of North Carolina at Chapel Hill.

———. 1983. Text processing: Computer applications in history and anthropology. Workshop presented at the Institute for Research in Social Science, University of North Carolina at Chapel Hill.

———. 1983. Computer applications to the process of anthropological research. *Social Science Newsletter* 68(4): 132-134.

———. 1983. "Symbols" and "Politics" in social process. Paper presented to American Anthropological Association, Chicago, IL.

Livesay, M., and J.R. Harding. 1984. Cultural anthropology and public policy. In *Social science and public policy*, edited by G.J. McCall and G.H. Weber. 51-90. Urbana: University of Illinois Press.

Livesay, M., J.C. Boyer, and J.R. Harding. 1984. Conceptual frameworks and their implications for planners. In *Applied social science for environmental planning*, edited by William Millsap, 23-35. Boulder, CO: Westview Press.

———. 1990. Technology integration in special education at the high school level. Presentation at the Annual Meeting of the Technology and Media Division of CEC. Lexington, KY.

———. 1991. An organizational model of technology integration in districts and high schools. Presentation at the Annual Meeting of the Technology and Media Division of CEC. Kansas City, MO.

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- . 1991. Integrating technology into the curriculum (secondary level). RETOOL Workshop, February 14-16. Boca Raton, FL.
- . 1991. Models and innovation: Integrating technology within schools. Presentation at the Annual Meeting of the Society for Applied Anthropology. Charleston, SC.
- . 1991. Administration and technology integration in the schooling process. In *Proceedings of the Twelfth International Conference on Technology and Education*. Toronto, Ontario, Canada.
- Livesay, M., and P.E. Murray. Forthcoming. Promoting the integration of instructional technology into special education: An organizational process model. *Technology and Disability*.

Reports and Handbooks

- Livesay, M. 1978. Community politics and the process of school desegregation in Bradford. In *Moving Closer: An Ethnography of a southern desegregated school*. D.C. Clement et al. Report to National Institute of Education for a Field Study of an Urban Desegregated School.
- Livesay, M., and D.C. Clement. 1980. The development of black community influence in a southern school district. Report to National Institute of Education.
- Livesay, M. (assisted by Ann Gray). 1984. Introduction to TMMS: The textual materials management system. Social Science Data Library, IRSS, University of North Carolina at Chapel Hill.

Suzanne B. Loux

Education

School	Degree	Area of Concentration	Date
University of Pennsylvania	M.A.	Sociology	1967
Penn State University	B.S.	Education	1957

Employment

Employer	Title	Dates
Macro Systems, Inc.	Technical Director	1987-
SRA Technologies, Inc.	Director of Surveys	1982-1987
Kappa Systems, Inc.	Director, Center for Surveys and Statistics	1980-1982
The Urban Institute	Research Associate I	1972-1980
Penn State University	Instructor, Department of Sociology and Continuing Education	1969-1971
Aged Services Project	Research Associate	1967-1969

Work Experience

Ms. Loux has over 20 years' experience in the design, conduct, and management (financial and technical) of large-scale survey research, including telephone and field interviewing and mailed questionnaires. The majority of Ms. Loux's research has focused on the low-income population and agencies that serve this population. Major survey efforts which Ms. Loux has directed include a 7-year longitudinal study of public housing management, including two-wave collections of data concerning tenant certification procedures; a study of expedited service in the Food Stamp program; and a longitudinal survey of SSI recipients. In addition to technical direction, Ms. Loux has been responsible for project budgets of over \$1 million and for supervision of project staff (both in-house and subcontractor) of up to 300 individuals.

Ms. Loux currently serves as project director for the HUD-funded Quality Control for Rental Assistance Subsidies study (contract HC-15170). The purpose of this study is to formulate, test, and implement procedures and policies that will provide HUD with nationally representative information about the extent, severity, cost, and sources of errors associated with the certification/recertification and rent calculation process. In-person interview and file data will be collected from 5,400 tenants of 700 Section 8, Section 236, and public housing projects. Extensive verification procedures will be used to identify errors and their sources.

For a recent DOL study, the JTPA Staffing Study, Ms. Loux participated in developing discussion guides used in collecting data from a variety of agency respondents at case study sites and in recruiting sites for participation. She conducted site visits to local and State JTPA agencies, interviewing JTPA agency officials as well as service providers such as vocational schools, employers, and nonprofit community organizations. Case study reports were

written for each site. For another recent DOL study, the Quality Control Consistency Study, Ms. Loux assisted in training State and local quality control reviewers in implementing new procedures for unemployment insurance case reviews. The new procedures will be compared to current procedures to determine differences in the number of discrepancies between Federal, State, and local case reviewers.

Prior to joining Macro, Ms. Loux served as director of surveys at SRA Technologies, Inc. Her projects at SRA included:

- **HCFA Medicaid Recipient Review Project**--As project director, Ms. Loux monitored both the technical and administrative aspects of this project in which project staff conducted quality control re-reviews of Medicaid cases in four states. Three methodologies were tested in this process: full verification (i.e., case record abstraction plus in-person, in-depth interviews with beneficiaries); full verification through collateral contacts (but in-person interviews only when indicated by verification results); and verification of only those items which were questionable from the case record review. This study was a pilot test of the ability of a contractor to conduct such activities.
- **Expedited Food Stamp Study**--As survey director, Ms. Loux designed and supervised data collection in a nationwide survey of food stamp participants, with particular emphasis on recipients of "expedited service." This study was conducted at 60 local food stamp offices during a 3-month period. Data were collected primarily from office case files. A total of 6,000 case files were abstracted, and 8,000 new applicants were followed up to determine the outcome of their applications. Ms. Loux was responsible for staff supervision, cost monitoring, training, questionnaire development, overall quality control, and report production.
- **Supplemental Security Income (SSI) Recipients**--Ms. Loux monitored a nationwide survey for the Social Security Administration of drug addicts and alcoholics who receive SSI due to disabilities related to their drug abuse. Over 600 recipients at eight sites were interviewed at three points in time over an 18-month period. This population presented particularly severe problems in interviewing due to their impaired recall and overall mental deterioration. Psychiatric nurses were recruited and trained as interviewers to partially overcome the problems inherent in interviewing such a population.
- **ACTION Senior Companion Study**--As project director, Ms. Loux directed the collection of data for the third wave of a longitudinal study of Senior Companions. She trained and supervised field staff who interviewed Senior Companions and a control group at nine locations throughout the country. A response rate of over 80 percent of the original sample was achieved even though the contractor conducting the second wave completed less than 50 percent. Interviews were conducted using the OARS methodology.
- **Occupant Protection Systems**--As project director for the National Understanding and Acceptance of Occupant Protection Systems Study for the National Highway Traffic Safety Administration, Ms. Loux designed a telephone survey and instrument and wrote the final report. A staff of 20 conducted interviews with 1,200 respondents nationwide concerning their knowledge and acceptance of air bags, automatic safety belts, and mandatory safety belt legislation, and what information the public needed to make informed decisions about these areas.
- **Mortality Study of Workers Exposed to Acrylonitrile**--In this study, the work histories of 25,000 workers in eight plants using acrylonitrile were abstracted, and the medical histories of 2,500 of these workers also were abstracted. The abstracting task involved numerous conventions in recording work areas and job titles in the company personnel files. Other activities included tracing all cohort members as to mortality and, for 10 percent of the sample, completing telephone interviews concerning smoking behavior.

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- **Bilingual Students in Immersion Programs**--In this study, Ms. Loux served primarily as an administrative manager of the subcontractor, monitoring finances and ensuring that project activities were within scope and completed in a timely manner. This 3-year study involved over 100 field staff, both full-time and part-time, who completed various tasks, such as classroom observations, language testing, training teachers to collect data, and related tasks.

As the Director of the Center for Surveys and Statistics at Kappa Systems, Inc., Ms. Loux was project manager for an evaluation of Community Energy Projects (CEPs) that were funded by ACTION to encourage citizens to implement low-cost, energy-saving measures. Data were collected at two sites through in-person interviews as well as from utility companies. Ms. Loux hired, trained, and supervised staff to conduct the interviews with 160 respondents; designed questionnaires and procedures; and co-authored the final report.

Ms. Loux directed a survey of 400 residents of California to assess the California Department of Mental Health's media campaign, "Friends Can Be Good Medicine." Respondents were located through random digit dialing; quotas required specific proportions of male/female respondents and Hispanic/ non-Hispanic respondents. Respondents were contacted up to three times through the followup surveys.

For an evaluation of Public Television System's publicity campaign (the "Tune-In" campaign) under contract to the Corporation for Public Broadcasting, Ms. Loux supervised data collection through telephone interviews with 1,500 respondents living in 20 public TV station areas. Teenagers as well as adults were interviewed, and minimum quotas set for Black and Hispanic respondents. Questionnaires also were mailed to the 20 PTV stations that elicited data about their campaigns. In addition to an overall evaluation of the nationwide campaign, individual reports were prepared for each of the 20 PTV stations based on the respondents from their area. These reports included both descriptive information and recommendations for future campaigns.

Under extremely tight time constraints (2 weeks), Ms. Loux assisted Peace Corps staff in developing questionnaires to be tested in Paraguay with seven respondent types, including both Peace Corps staff and volunteers and host country officials. The questionnaires were favorably received and, if funding allows, these questionnaires will serve as the basis for worldwide data collection concerning Peace Corps activities.

During Ms. Loux's tenure at the Urban Institute, she conducted seven major, nationwide, longitudinal studies at public housing authorities (PHAs). Studies typically included at least 120 PHAs and 400 projects (the core sample of the studies) and 6,000 public housing residents. Two studies were directed at tenant income certification/recertification procedures and included 132 PHAs and 10,000 tenants. These studies required the ongoing cooperation of PHAs (many of which were included in all waves of data collection). Throughout the course of these surveys, no PHA declined to cooperate (despite having two data collections within a 6-month period). Ms. Loux had primary responsibility for designing the data collection forms, training supervisors and field staff, and monitoring progress and financial aspects of the projects. Ms. Loux also participated in the data analysis and writing of final reports for all of these studies.

Working with another consultant at the Urban Institute, Ms. Loux designed and implemented a study of social service needs of tenants of HUD-assisted housing in Montgomery County, Maryland. Five hundred households were interviewed concerning eight areas of potential need, including physical and mental health. Questions covered sensitive areas such as alcohol and drug abuse, spouse and child abuse, teenage pregnancy, loneliness, and others. This pilot study was used as the basis for a periodic assessment of tenant needs, and to assist the commission in planning its allocation of funds for social services.

Ms. Loux worked on the Aged Services Project, a 2-year research project funded by the Administration on Aging. Working with one other full-time researcher, she shared responsibilities for all phases of the project, including obtaining interviews with 1,000 residents of low-income areas of Philadelphia, and the collection of data from over 400 social services agencies. Interviewers included female welfare recipients who, when hired, were untrained in survey methodology. Responsibilities also included all administrative functions of the project, from payroll to reporting to the sponsoring agency.

Publications

National Understanding and Acceptance of Occupant Protection Systems. 1986. Final Report submitted to the National Highway Traffic Safety Administration, SRA Technologies.

Technical Evaluation of Selected Low Cost/No Cost Energy Conservation Steps, with Douglas L. Ross and James C. Hersey. Final Report submitted to ACTION, June 1982.

Evaluation of the 1980-81 Tune-In Campaign, with Robert Sadacca. Final Report submitted to the Corporation for Public Broadcasting, June 1981.

Comparison of Public Housing Tenant Characteristics: 1976-1979, with Robert Sadacca. *The Urban Institute, Working Paper* 1279-1, 1980.

Analysis of Changes at Tenant Management Demonstration Project, with Robert Sadacca. *The Urban Institute, Working Paper* 1335, 1980.

Data Collection Instrument and Procedures for the Youth Community Services Pilot Program, with George C. Theologus and Robert Sadacca. *The Urban Institute, Working Paper*, 1979.

Improving Public Housing Through Management, with David Carlson and Robert Sadacca. *The Urban Institute, Working Paper* 255-3, 1978.

Improving Public Housing Through Management: A Technical Report, with Robert Sadacca. *The Urban Institute, Working Paper* 225-2, 1978.

Conditions Facilitating Implementation of Successful Management Improvement Programs, with Robert Sadacca. *The Urban Institute, Working Paper* 225-1, 1978.

Evaluation of the Phase I Target Projects Program, with Ena Castro and Robert Sadacca. *The Urban Institute, Working Paper* 254-1, 1978.

Tenant Management Demonstration Projects: An Analysis of Baseline Data, with Robert Sadacca. *The Urban Institute, Working Paper* 5052-2, 1977.

Management Performance in Public Housing, with Margaret Drury, Morton Isler, and Robert Sadacca. *The Urban Institute, Working Paper* 208-5-2, 1974.

Health Conditions, Social Adjustment and Utilization of Community Resources Among Negro and White Aged, with Carl Hirsch and D.P. Kent. Final Report submitted to AOA. University Park, PA: The Pennsylvania State University, 1972.

Homogeneity and Heterogeneity Among Negro and White Aged, with Carl Hirsch and D.P. Kent. In Planning Action and Research for the Elderly, D.P. Kent, S. Sherwood, R. Kastenbaum, eds., NY: Behavioral Publications, 1969.

Professional Affiliations

American Sociological Association
Southern Sociological Association
American Association for Public Opinion Research
American Evaluation Association

Richard E. Mantovani

Education

School	Degree	Area of Concentration	Date
The Johns Hopkins University	Ph.D.	Social Relations, Quantitative Methods	1978
Southern Connecticut State College	B.A.	Sociology	1970

Employment

Employer	Title	Dates
Hopkins Associates	Director	1986-
National Council on the Aging	Senior Research Associate	1981-1986
United Mine Workers Health and Retirement Funds	Program Manager	1979-1981
The Orkand Corporation	Consultant	1978-1979
Association of American Medical Colleges	Research Associate	1976-1978
Kirschner Associates	Consultant	1974-1975

Work Experience

Dr. Mantovani has over 15 years of experience in evaluation research, decision support, strategic planning, and systems design in aging, employment and training, and health and human services. His background includes project management as well as technical support experience both as a consultant to the government and private sector clients, and in decision-support roles in the private sector. Dr. Mantovani has managed multi-project programs and supervised large data collection and analysis projects. He has also designed and managed the development of large relational database systems.

Dr. Mantovani is currently a partner in Hopkins Associates and provides support to clients in evaluation research, statistical analysis and database development. For the National Headquarters of the American Red Cross, he is currently consulting on two projects. Dr. Mantovani has provided evaluation expertise on analyses of pilot tests of Red Cross HIV/AIDS training programs. Besides helping Red Cross evaluation staff, he has designed data collection forms and performed analysis on data collected from training sessions. Other training programs evaluated by Dr. Mantovani include CPR and first aid courses.

On another current project, Dr. Mantovani is participating on an evaluation of the Red Cross's response to Hurricane Hugo and the 1989 San Francisco earthquake. His roles are to supervise the collection of data from Red Cross staff involved in administering the disasters and to perform a cost-benefit analysis of in-kind contributions. This project

involves the design and analysis of complicated data collection protocols for evaluating the Red Cross's response from various staff perspectives.

In another project for the Red Cross, Dr. Mantovani provided assistance in the development of a strategic marketing database and in a subsequent analysis of this database. These efforts involved collecting demographic, health care provider, and health utilization data from various secondary data sources, and combining these large databases by Red Cross regional units. The databases included comprehensive large data files produced by the Census, the American Hospital Association, National Center for Health Statistics, and Medicare. Dr. Mantovani developed strategies to identify market potential for certain products, determine market share, and assess the attractiveness of markets.

For the Energy Information Agency of the Department of Energy, Dr. Mantovani performed analysis of energy data collection systems. In this set of tasks, he analyzed methodologies for estimating missing values and derived estimates of errors resulting from estimation techniques. This task involved examination of imputation and estimation methodologies used by the Department of Energy, collection of data, and identification of error rates associated with the methodologies.

From 1981-86, Dr. Mantovani served as a senior research associate for the National Council of the Aging (NCOA). As such, he reported directly to the deputy executive director, and was responsible for all research and data analysis activities. At NCOA, he led research efforts in a number of issue areas--including employment and training, health care, retirement, and evaluation of program activities such as those sponsored by Title III of the Older Americans Act. Within these areas, he helped staff to formulate policy, developed data analyses of programs aimed at the elderly, and provided systems expertise to the organization. Specific projects include the following:

- Evaluation of Older Worker Eligibility and Participation in Title V and CETA--Under a subcontract with Westat for the National Commission for Employment Policy, Dr. Mantovani directed various analyses relating to the government older worker employment and training programs. With Westat staff, he designed an approach for using varied employment and population data sources, such as the Current Population Survey, with CETA and Title V databases and performed multivariate analyses on those data.
- Analyses of Participation and Placement in Title V--Under a contract from the Department of Labor, Dr. Mantovani provided a set of analyses of participation and placement rates for the older workers involved in the Title V program. The analyses involved an examination of the demographic and employment related statistics on the length of stay in the program and the placement success of participants, as well as on the programmatic elements that were associated with high placement rate.
- Evaluation of the Title V-Section 502 Program--Under a contract from the Department of Labor, Dr. Mantovani analyzed patterns of participation and outcomes related to the Title V-Section 502 Private Sector Initiative Program for Older Workers. Dr. Mantovani directed data collection and analysis effort related to this program and submitted a report to DOL.
- Studies of Retirement and Income Adequacy--Under a set of contracts from the Traveler's Insurance Companies, Dr. Mantovani analyzed information from a commissioned Louis Harris survey with regard to part-time employment after retirement and to income adequacy for older workers.
- Study of Access to Health Care--Under a contract from the Robert Wood Johnson Foundation, Dr. Mantovani performed an analysis of access to health care by older Americans using survey data from a Louis Harris survey of older Americans. The analysis examined the odds of obtaining health care for various subpopulations with different levels of insurance.

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- Study of Performance Base Contracting--Under a contract for the State of Virginia's Department on Aging, Dr. Mantovani evaluated local service delivery systems for the elderly. This project involved site visits, collection of financial and enrollment records at the sites, and surveys of providers. The analyses focussed on the viability of performance based contracting for those programs administered by the Department on Aging under the Older Americans Act.

As a Program Manager at the United Mine Workers Health and Retirement Funds, Dr. Mantovani was responsible for managing research on issues of interest to the Funds Trustees. His responsibilities included research on the health needs and utilization of Funds beneficiaries. While at the Funds, he supervised the ongoing activities of three graduate level professionals, numerous consultants on special projects, and up to 20 other staff.

- Black Lung Liability Study--Dr. Mantovani directed a study to estimate government liabilities for beneficiaries of the DOL Black Lung Fund. This project involved the development of a sampling and study design, the collection of data from automated and manually accessed claims files consisting of millions of records, the development and specification of rules for identifying Black Lung claims, and the final estimation of liabilities that were owed the Funds by the Department of Labor. This study involved the use of three professionals and over 20 staff.
- Actuarial Analyses--Dr. Mantovani performed demographic and actuarial analyses that predicted future health care expenditures for beneficiary population. The analyses involved the use of mortality and population data to simulate the aging of the beneficiary population and to forecast health care costs associated with the aging population.
- Surveillance Systems--Dr. Mantovani developed Medical and Drug Surveillance Systems for tracking the use of medical procedure and drugs. Although the emphasis of these systems was on the development of cost-containment systems, quality issues were explored. As part of this effort, Dr. Mantovani managed studies on the prevalence of drug use and abuse in the elderly population and on the utilization of drug among older individuals with chronic conditions.
- Mortality Studies of Mineworkers--As part of his duties, Dr. Mantovani supervised the analysis of mortality among mineworkers. This project involved the nosological classification of deaths from death certificates by primary and secondary causes and the development of an approach for analyzing cause of death information.

At the Orkand Corporation, Dr. Mantovani participated in a study that examined the 1976 evaluation of PSRO's. Dr. Mantovani's role in the project was to review and critique the evaluation methodology used in that study and to assist in interviews with local PSRO directors.

While at the Association of American Medical Colleges, Dr. Mantovani managed studies related to the financing of medical education. Dr. Mantovani was responsible for analysis of a database consisting of over 5000 records on the finances of medical students. These studies, funded under a contract from the Health Resources Administration, provided policy papers on the role of government financing of medical education, and on indebtedness and the career plans of the students. Under the same contract, Dr. Mantovani also provided an analysis on the relationship between Public Health Service Scholarships and service in undeserved areas.

As a consultant at Kirschner Associates, Dr. Mantovani participated in an evaluation of nutrition programs for the elderly in Dade County and Chicago. He supervised survey activities in Chicago and analyzed data on individuals participating in the programs and on agency personnel administering the programs.

Systems Design and Software Development Activities

- Designed and developed a relational database system using ORACLE. Dr. Mantovani directed the overall design of the systems, including the design of the data dictionary, data entry procedures, data retrieval processes, and the user interface.
- Designed and developed a conference tracking system. Using Dbase III, Dr. Mantovani designed a system for tracking and maintaining records for tracking conference attendees. In addition, Dr. Mantovani developed software for processing presentation abstracts.
- Designed and developed a Health Information System on a DEC mini-computer. Dr. Mantovani developed, in Fortran, a Health Information System reporting program.
- Designed and developed a system for strategic planning development tool for community colleges. Using Basic, Dr. Mantovani developed a self-administered survey and analysis system for use on PC's.

Designed and developed a PC eligibility system for various state and federal employment programs. This system was written in Prolog and makes use of expert system technology to explore options for applicants.

- Designed and developed an Executive Information System tool for use in performance evaluation on business or outcome measures. This system, written in Smalltalk, is a graphically based assessment tool that allows users to examine trends and to make comparisons across several complex data sets.
- Dr. Mantovani, under a contract with Boston University and the Agency for International Development, participated in a team assessment of the use of microcomputers for collecting and displaying health information in Sierra Leone.

Detailed Information on Technical Experience and Skills

I. Research Skills

Research Design
Cost Benefit Analysis and Cost-Effectiveness Studies
Survey Research (Questionnaire Design and Sampling)
Econometric Analysis
Multivariate Clustering Analysis
Contingency Table Analysis (Log Linear Models)
Sampling Design
Probability Models
Time Series Analysis
Decision Theory Methodologies

II. Knowledge Engineering and Systems Analysis

Interviewing Domain and Functional Experts
Systems Specification
Object-Oriented Design
Entity-Relationship
Relational Database Design
Systems Analysis

III. Computer programming

Programming Languages--C, Fortran, Basic, Prolog, Smalltalk
Databases--Oracle/SQL, Dbase III+, Clipper
Statistical Packages--SPSS, SAS, BMDP
Expert System Shells (PCEasy, First Class, Exsys)
Numerous spreadsheets and wordprocessors

IV. Operating Environments

PCs--MS/DOS CP/M86
Vax--VMS
IBM 370--TSO (WLYBUR)

Reports and Publications

- Mantovani, R. 1987. *An analysis of computer edit verification procedures for FERC Report 423*. Report prepared for the Office of Statistical Standards, Energy Information Agency, Department of Energy, Washington, D.C.
- _____. 1987. *An analysis of imputation procedures for The Weekly Petroleum Status Report (EIA 800 through EIA 804)*. Report prepared for the Office of Statistical Standards, Energy Information Agency, Department of Energy, Washington, D.C.
- _____. 1987. *An analysis of computer edit verification procedures for EIA Report 857*. Report prepared for the Office of Statistical Standards, Energy Information Agency, Department of Energy, Washington, D.C.
- Mantovani, R., K. Rupp, E. Bryant, M. Rhoads. 1987. Government Employment and Training Programs, and Older Americans. M. Rhoads. In *The Problem Isn't Age: Work and Older Americans*; edited by Steven H. Sandell. Praeger: New York.
- Mantovani, R., J. Welsh, E. Wickersham. 1984. *Analysis, consultation and training to improve productivity of Older Americans Act Programs funded by the Virginia Department for the Aging and operated by area agencies on aging in Virginia*. Report prepared for The Virginia Department for the Aging, Richmond, Virginia.
- Mantovani, R. 1984. *The final report for The Project for Strengthening Health Delivery Systems*. Report prepared for the Boston University Policy Institute under a Grant from the Agency for International Development, Washington, D.C.
- Mantovani, R., K. Rupp, E. Bryant, M. Rhoads. 1983. *Factors affecting the participation of older Americans in employment and training programs*. The National Commission for Employment Policy, Washington, D.C.

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- Mantovani, R., K. Rupp, E. Bryant, M. Rhoads. 1983. *Eligibility and participation rates of older americans in employment and training programs*. The National Commission for Employment Policy, Washington, D.C.
- Mantovani, R., C. Reesman, and K. Rupp. 1983. *Coordination and cooperation between SCSEP and CETA operations*. The National Commission for Employment Policy, Washington, D.C.
- Mantovani, R. 1983. *Preliminary evaluation of Phase I of NCOA's Private Sector Initiative Program*. Report prepared for the Office of Education and Training Assistance, Department of Labor, Washington, D.C.
- _____. 1982. *Perceived and actual access to health care by individuals 55 years and older*. Report prepared for the Robert Wood Johnson Foundation, Princeton, NJ.
- Mantovani, R., and H. Sheppard. 1982. *Hard strapped and well-off retirees*. A report prepared for the Traveler's Insurance companies, Hartford, Ct.
- _____. 1982. *Part-time employment after retirement: Its importance and potential*. A report prepared for the Traveler's Insurance companies, Hartford, Ct.
- Mantovani, R., and S. Schildhaus. 1979. *Analysis to confirm and explain findings of the 1977 and 1978 PSRO Evaluations*. Report prepared for the Health Care Financing Administration, Department of Health and Human Services, Washington, D.C.
- Mantovani, R. 1978. *Trends in medical student financing 1973-76*. Association of American Medical College, Washington, D.C.
- _____. 1978. *Study of Public Health Service (PHS) scholarship recipients and National Health Service Corps (NHSC) participants*. Association of American Medical Colleges, Washington, D.C.
- _____. 1977. *Medical student finances and medical school institutional characteristics*. U.S. Government Printing Office, Washington, D.C.
- _____. 1977. *Medical student finances and student personal characteristics*. U.S. Government Printing Office, Washington, D.C.
- _____. 1976. *Medical student indebtedness and career plans*. U.S. Government Printing Office, Washington, D.C.
- _____. 1978. A quantitative analysis of the impact of Federal regulative activities on industrial labor disputes. Ph.D. Diss., The Johns Hopkins University, Baltimore, Maryland.

Presentations

- Mantovani, R. 1985. Coping with performance based contract systems: A provider's perspective. 1985 National Council on the Aging Annual Conference, San Francisco, California.
- _____. 1984. Managing program objectives through spreadsheet simulations. Senior Community Services Program Annual Conference, Baltimore, Maryland.
- _____. 1984. Cost-effectiveness approaches in increasing the impact of human services agencies. 1984 National Council on the Aging Annual Conference, Washington, D.C.
- _____. 1984. Introduction to microcomputers for social service agencies. 1984 National Council on the Aging National Conference, Washington. D.C.
- _____. 1982. Bringing gerontology into the computer age. Symposium discussant 8th Annual Meeting of the Association for Gerontology in Higher Education, Washington D.C.
- _____. 1982. Decision-making and evaluation research. 1982 Annual Conference the National Council on the Aging, Inc. April, Washington, D.C.
- Mantovani, R. and J. Shaikh. 1981. The roles of cardiovascular and respiratory disease in deaths among elderly coal miners. 34th Annual Gerontological Society Meetings. November, Toronto, Canada.
- Mantovani, R. and A. Berkowitz. 1981. The use of provider and beneficiary based information systems in monitoring health service utilization. Operations Research Society of America/ The Institute of Management Services joint meeting. November, Colorado Springs, Colorado.
- Mantovani, R. 1980. The use of logistic models in analyzing multiple causes of death. 108th Annual Meeting of the American Public Health Association, Detroit, Michigan.

Panels

- American Council on Life Insurance (Advisory Group on a Pre-Retirement Study: 1985.)
- GAO Advisory Group on Evaluation Research Options in the Area of Aging and Work. 1983.
- NIMH and HCFA Grant and Contract Proposal Evaluation Committees 1980-1984.
- Veterans Administration Proposal Evaluation Panel. 1984-85.

Cynthia Holmes Morgan

Education

School	Degree	Area of Concentration	Date
George Mason University	--	Business Administration	1986
Florida State University	M.S.W.	Administration	1979
University of the Pacific	B.M.	Music Therapy	1975

Employment

Employer	Title	Dates
Macro Systems, Inc.	Associate	1989-
Macro Systems, Inc.	Consultant	1986-1989
Self-Employed	Independent Health Care Consultant	1985-1986
Surgical Care Affiliates	Development Director	1984-1985
Charter Medical Corporation	Project Manager	1982-1983
Florida Panhandle Health Systems Agency	Health Planner/Director of Planning	1980-1982
Florida State Association of District Mental Health Boards	Executive Director	1978-1979
Children's Home Society	Legislative Aide	1977-1978
Florida State Hospital	Music Therapist	1975-1977

Work Experience

Ms. Morgan has over 15 years of experience in the health and human service fields. Her responsibilities have included planning, management, and analysis, particularly qualitative analysis, for multiple projects which have been oriented to providing a wide range of social and health care services. Ms. Morgan has been or is currently involved in the following major assignments:

- **WIC Dynamics (USDA/FNS)**--Ms. Morgan is currently serving as a key staff member for one component of this study--the evaluation of a computerized nutrition education system. She assisted in the design of data collection instruments and in developing the study plan. She will also have a role in preparing the OMB clearance package for this aspect of the study. As part of the overall WIC assessment, she will play a major role conducting case studies at WIC sites.
- **Demonstration Partnership Program Study (DHHS/ASPE and FSA/OCS)**--Ms. Morgan is currently serving as the project manager of this study that will strengthen grantee evaluation plans, develop a common dataset to be used by all program grantees, and develop a comprehensive paper and review of literature on case management as it relates to self-sufficiency programs. The project also includes developing workshops for grantees: to present evaluation techniques to grantees; another to facilitate the presentation of evaluation findings from earlier program grantees; and two to further refine approaches, datasets, and future research issues for key self-sufficiency program models.

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- **Study of Model Child Welfare Programs Serving Drug-Exposed Children (DHHS/ASPE)**--The purposes of this study were to (1) identify model programs designed to meet the needs of drug dependent infants and children, (2) examine the policy, service, and systems context within which they operate, and (3) assess their impact on those components of the child welfare system dealing with child abuse, neglect, and foster care. Site visits were conducted in four major U.S. cities and involved extensive interviews and on-site observations of programs. A total of 30 programs were visited. As the study team director, Ms. Morgan was involved in the development of descriptions of the programs, a discussion of the systems in which they operated, and a listing of policy issues and suggesting questions for further study.
 - **Evaluation of the Comprehensive Perinatal Care Program in Selected Community and Migrant Health Centers (HRSA)**--The study involved site visits to nine migrant/community health centers to conduct descriptive, qualitative process analyses of perinatal care programs serving low-income, medically underserved women. One of the key elements of study was case management for perinatal patients. Ms. Morgan served as the project co-manager and was responsible for key project elements such as development of the site visit protocol, coordination with clinical consultants, assisting in the development of the proposed evaluation design, and completing written reports. Ms. Morgan conducted site visits to eight of the nine centers included in the study. She was also responsible for analytical sections of the final report.
 - **An Analysis of the Effectiveness of the AIDS Prevention Programs Among Minorities (PHS, OMMH)**--As the project manager and analyst, Ms. Morgan led a study team that analyzed the effectiveness of federally-funded AIDS prevention programs targeted to minority populations. The project involved abstracting project summaries to determine evaluative and research methods, training data abstractors, developing a database, making an inventory of such projects, and analyzing the findings of the study to make specific policy recommendations around research needs and gaps in determining the effectiveness of minority-focused AIDS prevention programs. She was the lead author for the final report.
 - **Demonstration Partnership Program Study (DHHS/ASPE and FSA/OCS)**--Ms. Morgan served as the project manager for a study to provide technical assistance in evaluation issues to funded demonstration projects that address the needs of the poor. The project provided assistance to further strengthen the quality of the funded projects, refine the grantee evaluation plans, and develop a strategy for disseminating project results. The project also included developing technical workshops on evaluation techniques for the grantees. In three workshops, she served as a group facilitator. In addition to her role as the project manager, Ms. Morgan also served the project as an analyst.
 - **Study of Infants and Children With HIV Infection in Foster Care (DHHS/ASPE)**--Ms. Morgan served as a key team member for this project. She was the primary team member who conducted site visits to eight State/local jurisdictions to review their foster care systems and system linkages for HIV infected infants and children. She had a major role in shaping the cross-cutting issues that emerged and in writing the final report.
 - **Health Services Evaluation Project (New York Department of Correctional Services)**--Ms. Morgan served as the deputy project manager and lead analyst for this study. The project evaluated the present and future health care needs of the New York prison system; reviewed the current health care program capabilities and management information system and made recommendations on future service delivery options and alternatives. As the deputy project manager, Ms. Morgan had management and technical involvement in all facets of the study.

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- **Assessment of the Development and Implementation of State AIDS Partner Notification Programs (PHS)**--Ms. Morgan served as a senior team member on this project. She had a key role in the development of the site visit key informant surveys, overall framework for the study, and in preparation of the OMB clearance package. As part of the study, a planning model for such programs was developed, using evaluative criteria and existing program outcomes. Ms. Morgan was responsible for the conduct of three of the five site visits.
 - **Alcohol Policy Analysis Study - The Impact of Alcohol-Related Morbidity on Hospital Caseloads and Resource Utilization (NIAAA)**--The study reviewed and critiqued literature and available datasets to determine the impact that alcohol-related morbidity has on hospital caseloads and resource utilization. As a member of the project team, Ms. Morgan was responsible for the literature search and retrieval, as well as being the lead writer for the report. Publication of the study is pending.
 - **Department of State - Drug Demand Reduction Services**--In support of the State Department's Bureau of International Narcotics Matters demand reduction activities, Ms. Morgan functions as a key team member and manager to provide special consulting services and technical assistance to ongoing State Department efforts. In this capacity, she has obtained requested data, and completed all logistical and coordination requirements to obtain and send special drug abuse consultants to other countries, and monitors tasks, budgets, and resources to complete specific tasks.
 - **Community Mental Health Boards of Michigan: Long Range Plan**--Ms. Morgan served as a key staff member in developing long-range plans for four small, rural Community Mental Health Boards in Michigan. As part of the planning process, each board/agency was reviewed in the context of community needs and linkages, current activities, projected service needs, and environmental factors. The planning process utilized a key informant survey and data collection and analysis. Ms. Morgan was responsible for all aspects of the project including client presentations and written reports.
 - **National Coalition for Recognition (of Diabetes Patient Education Programs) - NACOR**--Ms. Morgan served as the project coordinator for a national recognition/accreditation project in diabetes patient education. She managed the implementation of the process and was responsible for the development of board materials, administrative procedures, marketing development, planning of meetings, and other staff functions.

As a self-employed health care consultant, Ms. Morgan worked as a subcontractor with both consulting firms and individual clients completing market studies, regulatory reports, demographic studies, and data and facility analyses in the areas of health, health care facilities, long-term care, and others.

For Surgical Care Affiliates, Ms. Morgan managed the development of ambulatory health care (surgical) facilities. She was responsible for market analysis, regulatory proposal development, feasibility studies, site development, physician interviews and physician practice assessments to project utilization. Extensive work with physicians and other health care providers was required as the project was syndicated into a joint venture/limited partnership.

While with Charter Medical Corporation, Ms. Morgan was responsible for feasibility studies and the development of new inpatient psychiatric hospitals. Her specific functions included: regulatory proposal development, needs determination, site development, financial workups, and community analysis. The community component required working with mental health professionals (physicians and others) in both private and public sectors to determine the need for services, program design, staffing, referral sources, and projected utilization.

At the Florida Panhandle Health Systems Agency, Ms. Morgan's responsibilities included data analysis, writing planning documents, and standards development in the areas of health, mental health, hospital services, and community-based health delivery systems. She served as a liaison to several community agencies, and worked with the agencies to implement prioritized community projects. Ms. Morgan maintained the agency data functions (analysis and distribution) and developed her skills in use and assessment of data sets. In addition, Ms. Morgan also worked reviewing Certificates of Need and Proposed Uses of Federal Funds, and developed the Agency's first psychiatric bed need methodology.

Ms. Morgan served as the first executive director of the Florida State Association of District Mental Health Boards. The Mental Health Boards were State-funded planning and resource allocation organizations for all community mental health services. Her duties included planning and staffing annual statewide meetings and functioning as the Association's legislative representative.

Ms. Morgan implemented the first legislative program for the Florida Children's Home Society, a child welfare and adoption agency. Her functions included developing a newsletter and monitoring and analyzing State legislation that considered the issues of adoption, protection of children, foster care, and others.

Earlier, Ms. Morgan was a music therapist at Florida State Hospital, working with adolescent, geriatric, and forensic clients. She served on hospital policy committees and as one of the key members of the first State hospital chapter of a Mental Health Association. Ms. Morgan served several years on the Board of Directors of Leon County Mental Health Association, and was President during 1978-1979.

Publications

Thomas, S.B., and C.H. Morgan. In press. Evaluation of community based AIDS education and risk reduction projects in ethnic and racial minority communities: A survey of projects funded by the U.S. Public Health Service. In *Program Planning and Evaluation*.

Ahart, A., C. Rutsch, C.H. Morgan, and M. Kotler. 1991. *Programs serving drug-exposed children and their families*. Washington, D.C.: U.S. Department of Health and Human Services, Assistant Secretary for Planning and Evaluation.

Morgan, C.H., S. Martin, A.M. Rosenthal, and K. Wholey. 1990. *An assessment of the effectiveness measures documented by federally-funded AIDS prevention programs targeted to minority populations*. Washington, DC: U.S. Department of Health and Human Services, Public Health Service, Office of Minority Health.

Baughman, L.N., C.H. Morgan, S. Margolis, and M. Kotler. 1989. *Infants and children with HIV infection in foster care*. Washington, DC: U.S. Department of Health and Human Services, Assistant Secretary for Planning and Evaluation.

Assessment of the development and implementation of state AIDS/HIV partner notification programs. 1988. Washington, DC: U.S. Department of Health and Human Services, Public Health Service, Office of the Assistant Secretary of Health, Office of Health Planning and Evaluation.

Morgan, C.H., A.M. Rosenthal, and G.R. Reinhart. N.d. *Summary of major research findings on the impact of alcohol-related morbidity on hospital caseloads and resource utilization*. Rockville, MD: National Institute on Alcohol Abuse and Alcoholism (pending).

Presentations

- Morgan, C.H., A. Ahart, C. Rutsch, and M. Kotler. 1991. *Programs serving drug-exposed children and their families*. Executive briefing for the Assistant Secretary for Planning and Evaluation, U.S. Department of Health and Human Services, March, Washington, D.C.
- Morgan, C.H. 1989. Policy issues concerning infants and children with HIV infection in foster care. Paper presented at 5th Annual National Pediatric AIDS Conference, September, Los Angeles, CA.

Joseph L. Motter

Education

School	Degree	Area of Concentration	Date
Lyndon B. Johnson School of Public Affairs, University of Texas at Austin	M.P.A.	Public Affairs	1976
University of Toledo	B.A.	Political Science	1974
Taylor University	--	Political Science	1971

Employment

Employer	Title	Dates
Macro Systems, Inc.	Technical Director	1989-
Macro Systems, Inc.	Associate	1984-1989
Macro Systems, Inc.	Special Consultant	1981-1984
Lawrence Johnson and Associates	Senior Technical Consultant	1982-1983
Creative Socio-Medics Corp.	Senior Analyst/Project Manager	1978-1981
Creative Socio-Medics Corp.	Research Analyst	1977-1978
Northern Virginia Planning District Commission	Human Resource Planner	1976-1977

Work Experience

Since 1985, Mr. Motter has managed Macro's drug abuse demand reduction consulting, training, and technical services to the U.S. Department of State, Bureau of International Narcotics Matters (INM) to support drug abuse public awareness and prevention efforts in INM priority countries. Mr. Motter has provided briefings and training for drug abuse prevention workers from more than 30 countries. As INM project manager, Mr. Motter directs the INM drug abuse public awareness and demand reduction effort, which entails a variety of tasks, including epidemiological studies, development of a public awareness needs assessment methodology and public education implementation plans for Latin American and Asian countries, and demand reduction training sessions for foreign demand reduction officials. Mr. Motter has served four TDYs in Pakistan to provide narcotics public awareness training and technical assistance to the American Embassy Narcotics Coordinator, the Pakistan Narcotics Control Board (PNCB), and several Pakistan NGOs. He has also traveled to Jamaica to complete the Jamaica Public Awareness Country Reference Document to Santo Domingo to conduct public awareness training for the Organization of American States, and to Thailand, Bolivia, and the Bahamas to conduct INM training.

In addition to these training and consultative services, other tasks include program development for visiting foreign demand reduction officials in INM's Executive Observation Program, and extensive literature searches in drug abuse education, prevention, and treatment issues. Mr. Motter has recently directed the development and production of two drug abuse prevention manuals: *Building Public Awareness: A Handbook for Drug Awareness Campaigns* and *Understanding Drug Use Prevention Theories and Practical Approaches* for use by developing countries. The public awareness handbook has been translated into Spanish by the Organization of American States (OAS) as the basis for public awareness training in OAS countries.

Mr. Motter also serves as the coordinator of the training implementation team for OSAP's National Training System (NTS) 3-year contract, to provide nearly 200 training sessions for health professionals, mental health workers, criminal justice officials, and community-based prevention workers. The training is designed to develop a community-level infrastructure of competent drug and alcohol abuse treatment and prevention workers across the nation.

Mr. Motter has directed the development of 9 demand reduction training courses and coordinates the delivery of 16 weeks of training annually to government and NGO representatives in countries such as Bolivia, Peru, Colombia, Pakistan, Thailand, Mexico, Bahamas, Jamaica, Venezuela, Brazil and others. Training is conducted in Spanish as appropriate.

Mr. Motter is also a senior evaluator on the 3-year OSAP-sponsored evaluation of demonstration programs for high-risk youth. Mr. Motter will be conducting multiple, extended site visits to eight programs across the United States to identify new and promising prevention approaches and to assess replication feasibility. The evaluation includes process, implementation, and outcome components.

Mr. Motter was the intermediary task force leader on the Media and Materials Development Support contract with the Office for Substance Abuse Prevention (OSAP). Mr. Motter was responsible for screening and evaluating alcohol and drug prevention programs and materials that might be suitable for nationwide replication by numerous intermediary organizations. Mr. Motter was responsible for coordinating five OSAP Regional Communications Seminars designed to share state-of-the-art information on communication strategies for reaching high-risk populations and managing prevention resource centers. Mr. Motter has traveled to Canada and Puerto Rico to present OSAP programs to prevention workers.

Mr. Motter was project manager of the Clearinghouse on Homelessness Among Mentally Ill People (CHAMP) for the National Institute on Mental Health. Mr. Motter oversaw the daily clearinghouse operations and publication of the bimonthly bulletin, and directed CHAMP promotional activities. Mr. Motter coordinated the planning and conduct of the special knowledge development meetings of experts and the development of the proceedings.

For 2 years, Mr. Motter was the state and local outreach coordinator for the "Be Smart! Don't Start!--Just Say No!" national public awareness campaign targeted toward youth for ADAMHA's Office for Substance Abuse Prevention (OSAP). He developed a nationwide dissemination strategy for campaign products through a major media network, private voluntary organizations, and state alcohol agencies that provided access to the target population and implemented community-level activities to prevent the use of alcohol by preadolescents. Mr. Motter organized a network of campaign coordinators in every state, and planned and implemented regional workshops across the country to provide technical assistance to the campaign coordinators. He provided ongoing onsite and telephone technical assistance to state and local programs and coordinated the dissemination of campaign materials to State coordinators. Mr. Motter contributed to the planning of the national campaign kickoff event and coordinated the training of 300 state and local prevention workers.

Mr. Motter managed a Public Health Service (PHS) Task Order for the Offset Analysis of the Medicare Mental Health Demonstration Evaluation for the Department of Health and Human Services' (HHS) Assistant Secretary for Planning and Evaluation (ASPE), and the Health Care Financing Administration (HCFA). This sought to determine to what extent the costs of the ambulatory mental health services provided by the Demonstration appear to be offset by reduced utilization and costs of other health care resources and what factors had an impact on the degree of offset.

Mr. Motter was the project manager of a subcontract to the National Institute on Mental Health (NIMH) to design and test a cost-outcome research methodology to study research hypotheses in programs serving the adult chronically mentally ill. Mr. Motter was responsible for the processing and analysis of the data from six study sites in Missouri and Rhode Island.

Mr. Motter managed Macro's evaluation of the New York State Office of Mental Health Minority Mental Health Demonstration project. The demonstration was designed to test new approaches for providing mental health services to minority populations. Five programs in New York City and Buffalo were created to target Hispanic, Black, and Asian American chronically mentally ill as their patient populations. Mr. Motter was responsible for designing the evaluation plan that focused on implementation and process assessments and impact evaluation. A series of annual site visits were made to assess program and community impacts and review program operations and patient utilization records. Mr. Motter was co-author of the Preliminary Evaluation Report and the Final Evaluation Report.

In addition, Mr. Motter has participated in several other mental health studies. The first was the development and pilot testing of a survey of forensic mental health services provided in state correctional facilities as part of NIMH's National Reporting Program (NRP). Mr. Motter was responsible for developing the new survey instrument to inventory mental health staffing, funding, and service organization in state prisons. The second study was of patient classification systems for prospective rate-setting for Medicare patients in general hospital psychiatric units and psychiatric hospitals which are currently exempted from Medicare's new diagnosis-related groups (DRGs) rate-setting systems. The study investigated alternative classification systems to be used on a national basis in such facilities. The product of the study resulted in a report to Congress on how psychiatric services should be reimbursed under the prospective payment systems.

Mr. Motter previously served as the associate project manager of an evaluation of the Medicare Mental Health Demonstration. This demonstration was to test the cost benefits of expanding Medicare Part B mental health coverage. The evaluation of the demonstration required followup of Medicare beneficiaries treated in 45 community mental health centers, ambulatory mental health clinics, and partial hospitalization facilities, as well as data gathering on beneficiaries treated at 30 comparison sites and conduct of a national survey of all ambulatory mental health treatment programs. Mr. Motter's role in the project included managing the development and implementation of a national survey of 4,000 mental health facilities. His survey responsibilities included survey design and coordination of data collection and quality control activities. Mr. Motter also conducted site visits to attain essential evaluation data on program administration and management, staffing, charges and reimbursements, and client service utilization. In addition, Mr. Motter contributed to the analytic reports of the project.

In addition to this ASPE project at Macro, Mr. Motter managed an evaluation of new community-based alcoholism detoxification facilities in Connecticut to assess the impact of these facilities on the utilization of state hospital services. The study was designed to determine whether the availability of, and accessibility to, the new nonhospital services had an impact on the utilization of state hospital services by area residents in need of detoxification services. The evaluation also focused on comparative unit costs. Mr. Motter was responsible for the development and implementation of the evaluation plan. The evaluation report was prepared for the Connecticut Alcohol and Drug Abuse Commission and the State Legislature.

As a senior technical staff consultant at Lawrence Johnson and Associates (LJA), Mr. Motter served as the primary staff person on four Navy contracts with the Navy Alcohol and Drug Information (NADIS) Project Office. Projects included: an assessment of NADIS quality control procedures; recommendations for updating and revising NADIS data forms and output reports; an analytical study of drug treatment data collection by National Institute on Drug Abuse (NIDA) AND NADIS; and preparation of quarterly NADIS Statistical Reports. Project tasks included on-site visits to alcohol and drug abuse treatment, education, and prevention facilities in San Diego, Norfolk, and Jacksonville.

At LJA, Mr. Motter also participated in the design and early data collection efforts of the HCFA/ NIAAA Medicare-Medicaid Alcoholism Demonstration evaluation, and served as senior technical advisor for the 1982 NIDA/NIAAA National Drug and Alcoholism Treatment Utilization Survey.

During the course of Mr. Motter's employment at Creative Socio-Medics Corporation, he was extensively involved with the National Drug and Alcoholism Treatment Utilization Survey (NDATUS). NDATUS collected

management information from 12,000 alcohol and drug abuse service units in 57 states and territories for NIDA, the National Institute on Alcohol Abuse and Alcoholism (NIAAA), and the Food and Drug Administration (FDA). It also produced reports for the Veterans Administration and the Bureau of Prisons. As Project Manager for the 1980 NDATUS, Mr. Motter assumed responsibility for: survey planning, implementation, and data analysis activities; recruitment, supervision, and performance evaluation of a staff of 15 research analysts; and production oversight on 17 major project deliverables. In addition, he served as primary liaison with the project officer and client representatives from the collaborating Federal agencies. Mr. Motter's management plan and project budget strategy enabled completion of all project tasks within the framework of time and cost constraints and corporate management needs.

As the assistant project manager for the 1978 and 1979 NDATUS projects, Mr. Motter was responsible for the data collection phase of the survey, supervision of technical assistance to state agencies, and direction of quality control. He was also primary author of the 1978 Executive Summary, the Annual Report, and Veterans Administration Report.

For the 1977 NDATUS, Mr. Motter served as a regional coordinator. He participated in state training, provided technical assistance, conducted validation visits in 29 drug treatment units, and performed a special data analysis that produced a series of reports on the impact of third-party financing on drug abuse treatment. In addition, Mr. Motter assisted in the program evaluation of methadone treatment, and also in a study of the availability of drug abuse treatment services to minorities.

Prior to Mr. Motter's work with Creative Socio-Medics, he was employed as a Human Resource Planner for the Northern Virginia Planning District Commission in Falls Church, Virginia. In that capacity, he developed guidelines for the Regional Alcohol Plan, co-authored the FY 1978 Northern Virginia Drug Abuse Prevention and Control Plan, wrote the grant application for production of a film on drug control policies, and conducted program evaluation of all regional drug and alcohol programs.

While a student, Mr. Motter served as a graduate research assistant to the Texas Municipal League of Austin, Texas, and served internships with the Gulf Coast Waste Disposal Authority of Houston, Texas; the City of Toledo; and Ohio State Representative Richard L. Wittenberg. His duties and responsibilities on these internships allowed him to gain valuable experience in a broad range of activities, notably: public administration, program evaluation, legislative research, environmental impact assessment, survey and interview techniques, and development of precise and effective writing skills.

Mr. Motter's professional experience has involved: extensive experience in the management of a large Federal contract; in-depth knowledge of all aspects of large-scale management information systems, including survey design, coordination of data collection, field work, supervision of data processing and editing, and report preparation and presentation; interagency liaison and coordination; and extensive experience in applied research, including data analysis, statistical procedures, and program evaluation.

Papers and Publications

Pakistan Prevention Consultants Training Manual (with D. Nayyar and J. Harrison-Burns), Pakistan Drug Abuse Prevention Resource Center, Islamabad, May 1989.

Building Public Awareness: A Handbook for Drug Awareness Campaigns (with C. McNeil), INM, U.S. Department of State, Washington, July 1988.

Pakistan Country Reference Document (with J. Harrison-Burns, Bureau of International Narcotics Matters, Washington, October 1987.

Be Smart! Don't Start!--Just Say No! Lessons Learned (with W. Sowers), Office for Substance Abuse Prevention, September 1987.

Offset Analysis of the Medicare Mental Health Demonstration Evaluation (with G. Wright), delivered to HHS/ASPE and HCFA, May 1987.

Final Evaluation Report: New York Minority Mental Health Demonstration (with T. Jaskulski), presented to the New York Office of Mental Health, July 1986.

Preliminary Evaluation Report: New York Minority Mental Health Demonstration (with T. Jaskulski), presented to the New York Office of Mental Health, June 1985.

Final Evaluation Report--Medicare Mental Health Demonstration (with T. Janssen and L. Morrison), delivered to HCFA and HHS/ASPE, September 1984.

Evaluation of Community-Based Alcoholism Treatment Services in the State of Connecticut (with L. Morrison, M. Papageorgiou, and P. Carling), for the Connecticut Alcohol and Drug Abuse Commission, 1984.

"Correlative Study Between NADIS and Similar Civilian Studies From NIDA," delivered to NADIS Processing Office, N.A.S. Miramar, San Diego, January 1983.

"Assessment of Current NADIS Quality Control Procedures" (with G. Knight), Report presented to NADIS Processing Office, N.A.S. Miramar, San Diego, December 1982.

"Recommendations to Update and Revise NADIS Forms and Output Reports," (with G. Knight), delivered to NADIS Processing Office, N.A.S. Miramar, San Diego, December 1982.

Update to the Medicare Mental Health Demonstration-First Year Evaluation Report (with L. Price, L. Morrison, and T. Janssen), delivered to HCFA and HHS/ASPE, July 1982.

Motter, J., "The Impact of Third Party Payments on Drug Abuse Treatment," paper delivered at Alcohol and Drug Abuse Problem Association Conference, Washington, D.C., August 1979.

"Third Party Reimbursement - A Rapidly Growing Treatment Funding Source." *Drug Program Review*, Volume 6, Number 3, December 1978.

"Third-Party Funding - Does It Affect Program Staff, Use, Costs?" *Drug Program Review*, Volume 6, Number 3, December 1978.

Motter, J., Musillo, C., and Coughlin, T. "The Truth and Consequences of Third Party Reimbursement," delivered paper at National Drug Abuse Conference, Seattle, Washington, March 1978.

Executive Summary: 1978 National Drug Abuse Treatment Utilization Survey, National Institute on Drug Abuse, Statistical Series F, No. 5, December 1978.

Annual Report: 1978 National Drug Abuse Treatment Utilization Survey, National Institute on Drug Abuse, Statistical Series F, No. 6, February 1979.

"Veterans Administration Drug Treatment Programs: 1978 NDATUS" presented to Veterans Administration, Washington, D.C., 1978.

"Veterans Administration Drug Treatment Programs: 1977 NDATUS" presented to Veterans Administration, Washington, D.C., 1977.

FY 1978 Northern Virginia Drug Abuse Prevention And Control Plan, published in Falls Church, Virginia, December 1977.

Honors and Public Service:

Member of Montgomery County (MD) Community Leadership Task Force on Drug Abuse Prevention, 1988-1989

Chairman, Prevention Committee, Drug Abuse Advisory Council, 1988-1990

Community At-Large Representative, Montgomery County Drug Abuse Advisory Council, 1987-1990

Vice-Chairman, Montgomery County (MD) Drug Abuse Advisory Council, 1989-1990

Louise M. Peloquin

Education

School	Degree	Area of Concentration	Date
Washington University	M.A.	Educational Psychology	1975
Washington University	M.S.W.	Clinical/Administration/Social Work	1974
San Francisco State University	B.A.	Journalism/Education	1970

Employment

Employer	Title	Dates
Macro International Inc.	Health Professional Training Manager	1990-
University Research Corporation	Consultant	1990
Alliance for Aging Research	Consultant	1990
Project Hope	Consultant	1990
Center for Development and Population Activities	Consultant	1987-1989
PRITECH, Inc.	Consultant	1988
Margaret Sanger Center/Planned Parenthood of New York	Consultant	1988
March of Dimes Birth Defects Foundation	Director of Community Services	1981-1989
Girl Scout Council of the Nation's Capital	Consultant	1979-1990
ASPO/Lamaze Childbirth Association	Consultant	1989
Family Planning Training Institute of Egypt	Consultant	1987
Planned Parenthood of Metropolitan Washington	Director of Education and Training	1977-78, 1980-81
D.C. Department of Public Health	Public Health Adviser	1979
Ferguson-Florissant School District	Pupil Personnel Counselor and Secondary Teacher	1974-1978

Work Experience

Ms. Peloquin is the manager of the Health Professional Training Component of the National Training System (NTS). She develops, coordinates, and assists with implementation of training in AOD prevention to physicians, nurses, and mental health professionals. She also delivers drug abuse training in prevention, communication skills, public awareness, and program planning in the international arena—Nigeria, Israel, and Greece.

Previously, Ms. Peloquin was employed by the University Research Corporation, where she was a trainer for health communication in a social marketing program. She offered training in regional meetings for OSAP on how to develop communication plans for AOD projects in communities around the country.

For the Alliance for Aging Research, she served as coordinator of a national conference: Aging with Independence: Technologies for the New Century. She provided development and logistical support for a national educational meeting of over 200 key professionals in the aging field. The focus was on looking at new technologies to help aging people in the 21st century.

For the Center for Development and Population Activities/Project Hope, she served as curriculum developer and trainer, developing and delivering a training package for health professionals in Swaziland, Africa to qualify them to become AIDS prevention and intervention counselors. She coauthored the manual, *Training in AIDS counseling: A manual for use by trainers*.

While employed by the Center for Development and Population Activities, she implemented a professional training program (TOT) for educators in Family Life Education; she also trained participants from Departments of Education and Health, community-based programs and women's organizations. Her work involved program planning/development, implementation, evaluation, and training on proposal writing in Nigeria, Africa. In addition, she conducted a 5-day training program on AIDS education in Washington, D.C., for Nigerian health professionals and developed curriculum materials for Phase II of a Nigerian Family Life Education project for the Department of Education and out-of-school programs.

While employed by PRITECH, Inc. she conducted field trials and revised 10 World Health Organization (WHO) management/training modules in Nigeria, Africa on Oral Rehydration Therapy (ORT) and the Expanded Program for Immunization (EPI). She also conducted a community development training section.

For the Margaret Sanger Center/Planned Parenthood of New York, she conducted an on-site evaluation in Nigeria and Zimbabwe, Africa, of a 3-year Parent Education Program in Human Sexuality. She also developed and administered the evaluation tool and produced the final evaluation report for USAID.

For the March of Dimes Birth Defects Foundation, Ms. Peloquin created, implemented, and evaluated regional education and community programs in maternal and child health. She was responsible for 6-10 staff members, approximately 200 volunteers, 5 satellite offices, a grant budget of \$200,000 and a program budget of \$500,000. She developed a strategic plan for major educational/public policy conferences, training programs, a systematic grant review/approval process, professional advisory committees, and volunteer recruitment and development. She also was instrumental in the initial formulation of Healthy Mothers/Healthy Babies, a National Coalition focussing on public policy and education in materials on child health. She also developed and secured funding for a special project: Males: Their Roles and Responsibilities in the Family. In addition, she served as director of Beautiful Babies. . .Right From The Start. She assisted in the design, development, implementation, and evaluation of this public/private, multi-media/educational effort on prenatal care and infant mortality.

For the Girl Scout Council of the Nation's Capital, she developed, promoted, trained, and evaluated a peer education training program for adolescents (ages 10-19) and developed an adult leader training component. Her focus was on sexuality training (and AIDS), contemporary psycho/social/health concerns, substance abuse, communication skills, assertiveness, decisionmaking, and self-esteem.

For the ASPO/Lamaze Childbirth Association, she developed a marketing plan for the expansion of National Certification for Childbirth Educators; initiated research for development of a new C-6 status organization for Hospital Standards for Family Centered Maternity Care; created a strategic plan for incorporating the association's education, membership, and public policy programs; and was responsible for staff, volunteers, and Board education to the new project.

For the Family Planning Training Institute of Egypt, she planned and implemented TOT for Egyptian social workers and counselors on counseling techniques to address sexuality and family communication problems. (She taught through an interpreter.) The 7-day course included curriculum development, evaluation, and liaison with senior-level health officials.

As director of education and training for the Planned Parenthood of Metropolitan Washington, she was responsible for planning, coordinating, and managing community and clinic training activities. Duties included project development and implementation, proposal writing, securing and managing grant funds, standardizing training programs for clinic workers and volunteers, staff supervision, volunteer recruitment and development, and community/coalition organizing. She also co-authored a sex education training manual, *Peer Education in Human Sexuality*. In addition, she was director of a peer counseling project, and had direct liaison with public/private schools to develop, implement, coordinate, and evaluate educational curriculum on peer pressure and effective communication techniques, with a focus on contemporary psycho/social, health issues (substance abuse, reproductive health) for males and females. The program included teacher training and liaison with senior-level officials.

As a public health advisor with the D.C. Department of Public Health, Ms. Peloquin organized and implemented community-based programs focusing on maternal and child health concerns. She worked directly with the public and private sectors, women's organizations, and community groups to create innovative educational outreach programs to reduce infant mortality. Her responsibilities involved paraprofessional and professional training, public speaking, and extensive writing.

As a high school pupil personnel counselor she provided direct counseling services in individual, group, and family therapy; developed programs in assertiveness training, drug abuse, and career planning; supervised clinical internships for MSWs and secondary teachers; developed and conducted teacher/student workshops on minority issues; assisted in a Federal integration plan for three school districts; and conducted parent workshops on coping with adolescent and family communication issues. She also served as director of Deliberate Psychological Education, a program for junior/senior high students. She designed and implemented this school/community-based program focused on experimental learning in psychology. She also taught psychology on the secondary level.

Certifications:

Life Secondary Counseling, Missouri
Life Secondary Teaching, Missouri
Licensed Clinical Social Worker (L.C.S.W.)

George R. Reinhart

Education

School	Degree	Area of Concentration	Date
University of Georgia	Ph.D.	Sociology	1977
University of Florida	M.A.	Sociology	1967
Lehigh University	B.A.	Sociology	1964

Employment

Employer	Title	Dates
Macro International Inc.	Senior Scientist	1990-
Macro Systems, Inc.	Associate	1987-1990
University of Alabama at Birmingham	Associate Professor	1981-1986
University of Alabama at Birmingham	Assistant Professor	1972-1980
University of Georgia	Research Associate	1969-1972
National Center for Health Statistics	Statistician	1967-1969

Work Experience

Dr. Reinhart has broad experience in research methodology, data collection techniques, evaluation research, and applied statistical analysis. In the past several years, he has focused on the areas of drug and alcohol prevention, the evaluation of treatment modalities and methodologies, and the management and analysis of large datasets.

Currently, Dr. Reinhart is the senior analyst/evaluation and technical oversight manager for an OSAP funded evaluation of the Pregnant and Postpartum Women and their Infants Demonstration Program. In this evaluation of 115 demonstration programs targeting services to pregnant women who use drugs and their children, Dr. Reinhart is responsible for planning and developing a cross-site outcome evaluation that systematizes and centralizes data collection, data aggregation, data processing, and data analysis. The system includes turnkey data entry software and the development of algorithms to speed feedback to each site. This system serves as the basis for both process and outcome evaluation efforts for each of the demonstration projects and as an analytical database for cross-site comparisons. In addition to data management, Dr. Reinhart will be responsible for developing and coordinating technical assistance to demonstration project grantees in all areas of cross-site data collection and analysis.

In addition, Dr. Reinhart is directing a project that analyzes the results of surveys of NIDA drug abuse grantees. This analysis will examine the range and distribution of services and referrals provided by the NIDA grantees and examine the interrelationships among services, referrals, and client characteristics. In addition, the level of generalization of the analysis will be examined by comparing the surveys' results with those found in national databases. This analysis will provide information on the services required, referrals made, and the health conditions of children born to mothers who use drugs and of the mothers themselves. In addition, the analysis will examine the anticipated need for services, referrals and treatment as these children mature.

Working as part of a team with NASADAD, NAADAC, and ETP Corporation, Dr. Reinhart is responsible for planning and implementing a process and outcome evaluation for the National Substance Abuse Counselor Training program. This multi-year project, funded by OTI, will provide entry-level alcohol and other drug abuse training to an expected 8,400 persons in 700 training sessions across the nation in each of 3 years. The evaluation component examines (1) satisfaction with the training workshops, (2) level of short-term retention of workshop content, and (3) an assessment of the on-the-job utilization of workshop lessons and materials.

Dr. Reinhart is the research and evaluation director of a NIDA-funded project to implement and evaluate a quasi-experimental, multi-site project that will provide AIDS prevention and other services to high-risk pregnant women. This project utilizes the NIDA AIA and AFA questionnaires along with a project-developed protocol that monitors client intervention. For this 3-year project, Dr. Reinhart is responsible for development of data collection and data analysis and for maintaining the integrity of the research design.

Dr. Reinhart is also serving as project manager for a National Institute on Alcohol Abuse and Alcoholism (NIAAA) Study to develop an Alcohol Policy Analysis System. This involves the preparation of a series of legislative background papers and alcohol policy analysis studies for the Office of Policy Analysis in areas of concern to NIAAA. These papers investigate several areas, including the impact of alcohol warning labels, alcohol consumption and fatal traffic accidents, patterns of alcohol-related morbidity in general hospitals, and an analysis of alcohol- and drug-related DRGs. In addition, Dr. Reinhart is assisting in the development of an interactive, user-friendly database of recent, empirical, alcohol-related studies for use on a microcomputer system.

In another NIAAA-funded project, Dr. Reinhart is serving as the task leader for prevalence analysis for a survey designed to assess the prevalence of alcohol and other drug abuse and dependency in short-term hospitals and the impact of abuse and dependence on hospital utilization, charges, and costs. Along with assisting in the development of the research protocol, Dr. Reinhart will have primary responsibility for alcohol and drug abuse prevalence analyses for this study. Prevalence analyses will be based on study data collected through a sample of over 20,000 patients in an estimated 188 hospital facilities.

Dr. Reinhart was the director of research and evaluation of a NIDA-funded demonstration project AIDS Outreach to Therapeutic Community Contacts and Clients. Over 2,700 intravenous drug abusers and their sexual partners participated in a model intervention program that consisted of four phases: (1) recruitment into the program, (2) administration of the AIA, (3) intervention of participants on AIDS risk reduction practices, and 4) administration of the AFA. The intervention phase called for trained ex-addict outreach workers to spend 4 hours over a 6-month interval informing participants about how HIV is transmitted, what behaviors should be changed to protect themselves from becoming infected with HIV, and how to prevent transmitting the virus to others. The model intervention program clearly demonstrated its effectiveness in improving participant knowledge and behaviors, with the most clear-cut improvements in regard to risky behaviors. The program has statistically significant effects on decreasing injected drug use and non-injected drug use, decreasing risky needle hygiene (sharing works, frequenting shooting galleries, etc.), decreasing risky sexual behavior, and increasing level of AIDS knowledge.

Dr. Reinhart served as director of evaluation for a NIDA-funded 3-year community-based project that examined strategies designed to overcome barriers to drug abuse treatment. He was responsible for developing the evaluation methodology and will have primary responsibility for the project evaluation and analysis. The evaluation will utilize a case study methodology in six sites to assess the impact of a project-designed community education and awareness model on siting of drug treatment facilities.

Dr. Reinhart served as an evaluation specialist on a National Institute of Mental Health-funded study of the cost outcome for treatment of the chronically mentally ill. This multistate investigation examined cost and outcomes for a variety of treatment modalities in six sites using logistic regression models.

Dr. Reinhart has participated in a number of large, multicentered, controlled clinical trials. Included were Longitudinal Studies of Coronary Disease Risk Factors in Young Adults (CARDIA), Coronary Artery Disease Risk Factor Changes (CAD), Systolic Hypertension in the Elderly Program-Clinical Centers (SHEP), Hypertension Detection and Follow-Up Program (HDFP), and Multiple Risk Factor Intervention Trial (MRFIT), all funded by the National Heart, Lung, and Blood Institute. Dr. Reinhart conducted data analysis for MRFIT and HDFP data. For the former, he investigated the interrelationships between smoking and health; for the latter, he examined behavioral components of patient compliance.

In the CARDIA, CAD, and SHEP studies, Dr. Reinhart had primary responsibility for sampling for the Birmingham, Alabama, center. In addition, he created and edited the database for the CAD survey. Finally, he was part of the planning group for CARDIA, assisting in the development of the psychosocial questionnaire.

Dr. Reinhart was principal investigator of a study to evaluate the effectiveness of the program of a freestanding alcoholism treatment facility. This included the design, implementation, analysis, and interpretation of data which included survey instruments, biochemical assessments, and psychometric evaluations.

Dr. Reinhart served as an associate scholar in the Center for Aging at the University of Alabama at Birmingham. There, his activities included participation in the planning, design, and analysis of both local and statewide surveys to assess the needs of and to evaluate the services provided to the elderly.

Dr. Reinhart assisted in two studies that examined the etiology of suicide. One study looked at rural-urban differences in suicide, the second examined variations in suicide by occupational category and social class. He was responsible for all data collection and analyses for these studies.

Earlier, while at the National Center for Health Statistics, he assisted in planning, data collection and analysis, and report preparation for a series of studies in health manpower.

Selected Publications and Presentations

- Reinhart, G.R. 1991. Street Outreach as Drug Treatment. A paper presented at the annual meeting of the Southern Sociological Society, Atlanta, GA.
- Reinhart, G.R., R.I. Ross, and C.T. Love. 1990. AIDS Outreach to Therapeutic Community Contacts and Clients: Final Report. A paper presented at the NADR National Meeting, Bethesda, MD.
- Reinhart, G.R., and C.B. Fields. 1990. AIDS Outreach to Pregnant Women and Their Children: Preliminary Findings. A paper presented at the NADR National Meeting, Bethesda, MD.
- Love, C.T., R.I. Ross, and G.R. Reinhart. 1990. Matching IVUDU and Counselor Characteristics in an AIDS Prevention Outreach Program: Implications for Outreach Methodology in Drug- and AIDS-Related Interventions. A paper presented at the NADR National Meeting, Bethesda, MD.
- Ross, Roy I., G.R. Reinhart, C.T. Love, et al. 1990. AIDS Outreach to Therapeutic Community Contacts and Clients: Final Report. Submitted to the Community Services Branch, National Institute on Drug Abuse.
- Reinhart, G.R. 1990. A Review and Summary of Public and Private Sector Activities and Policies Bearing on Liver Transplants for Alcoholics. Submitted to the Office of Policy Analysis, National Institute on Alcohol Abuse and Alcoholism.

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- Reinhart, G.R., and A.M. Rosenthal. 1989. Preliminary findings: Changes in drug use, needle use, and sexual behavior among IVDUs. A paper presented at the NADR National Meeting, Rockville, MD.
- Levy, D., and G.R. Reinhart. 1989. Alcohol prices and fatal traffic accidents: An alcohol policy analysis brief. Prepared for the Office of Policy Analysis, National Institute on Alcohol Abuse and Alcoholism.
- Rosenthal, A.M., and G.R. Reinhart. 1989. Patterns of drug use, sex practices, and AIDS knowledge, attitudes, and behavior among IVDUs. A paper presented at the annual meeting of the Southern Sociological Society, Norfolk, VA, April.
- Frank, R.G., E.C. DeCoster, C.A. Taube, D. Salkever, and G.R. Reinhart. 1989. A review of data sets for studying Medicare's alcoholism DRGs for private inpatient treatment: An alcohol policy analysis brief. Submitted to the Office of Policy Analysis, National Institute on Alcohol Abuse and Alcoholism.
- Morgan, C.H., A.M. Rosenthal, and G.R. Reinhart. 1988. Summary of major research findings on the impact of alcohol-related morbidity on hospital caseloads and resource utilization. Prepared for the Office of Policy Analysis, National Institute on Alcohol Abuse and Alcoholism.
- Meleney, J., N. Pindus, J. Hermann, G.R. Reinhart, L. Daniels, and L. Morrison. 1988. A cost outcome methodology for the chronically mentally ill. Submitted to the Division of Biometry and Applied Science, National Institute of Mental Health.
- . 1988. Research Investigating the Impact of Alcohol-Related Morbidity on Hospital Caseloads and Resource Utilization. Prepared for the Office of Policy Analysis, National Institute on Alcohol Abuse and Alcoholism.
- Richardson, P., G. Reinhart, A. Rosenthal, C. Hayes, and R. Silver. 1987. Review of the research literature in the effects of health warning labeling. Submitted to the Office of Policy Analysis, National Institute on Alcohol Abuse and Alcoholism.
- Reinhart, G.R. 1986. Age and alcoholism: Outcomes and adaptations. A paper presented at the annual meeting of the Southern Gerontological Society, Norfolk, VA, May.
- . 1986. Death notices/obituaries as sources of social gerontological information. A paper presented at the annual meeting of the Southern Gerontological Society, Tampa, FL, May.
- . 1985. The segregation of income in the American metropolis. A paper presented at the annual meeting of the Southern Sociological Society, Charlotte, NC, April.
- Hughes, G.H., M.A. Pearson, and G. Reinhart. 1984. Stress: Sources, effects, and management. *Family and Community Health: The Journal of Health Promotion and Maintenance* 7(1), May.
- Hughes, G.H., M.A. Pearson, and G. Reinhart. 1984. Smoking cessation, coronary heart disease, and cancer: the Multiple Risk Factor Intervention Trial Results. A paper presented at the annual meeting of the Southeastern Psychological Association, New Orleans, LA, March.
- Reinhart, G.R., B. Carter, G. Cutter, P. Falls, G. Hughes, J. Kasteler, A. Lewin, and M. Sexton. Predisposing factors, attendance, adherence, and compliance in the Hypertension Detection and Follow-Up Program. A paper presented at the annual meeting of the Southern Sociological Society, Knoxville, TN, April.
- Reinhart, G.R. 1984. Psychosocial dynamics of RSVP volunteers. A paper presented at the annual meeting of the Southern Gerontological Society, Knoxville, TN, May.

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- Reinhart, G.R., and M. La Gory. 1983. Segregation by housing type: a preliminary analysis. A paper presented at the annual meeting of the Southern Sociological Society, Atlanta, GA, April.
- Reinhart, G.R., and J.W. Fly. 1983. Positive and negative adjustment among the retired. A paper presented at the annual meeting of the Southern Gerontological Society, Atlanta, GA, April.
- Reinhart, G.R., and L.L. Linden. 1982. Suicide by industry and occupation: A structural change approach. *Suicide and Life Threatening Behavior* 12(1), Spring.
- Reinhart, G.R. 1981. A review of *Social Science Research and Decision Making* by Carol H. Weiss and Michael Bucuvalas in *Social Science Quarterly* 62(3), September.
- . 1981. Occupational prestige 1947-1980. A paper presented at the annual meeting of the Southern Sociological Society, Louisville, KY, April.
- Fly, J.W., R. Hamby, and G. Reinhart. 1981. Leisure activity, life satisfaction and alienation in retirement. *Sociological Spectrum* 1(2), April-June.
- Reinhart, G.R. 1980. Demographics: Changing retirement patterns. A paper presented at Social Security in a Changing Society: A Symposium, Birmingham, AL, May.
- . 1980. Patterns of mortality of the southern aged. A paper presented at the annual meeting of the Southern Gerontological Society, Atlanta, GA, February.
- Fly, J.W., and G.R. Reinhart. 1980. Racial separation during the 1970's. *Social Forces* 58(2), June.
- Reinhart, G.R. 1979. Ecological patterns of alcoholism in a southern city. A paper presented at the annual meeting of the Mid-South Sociological Association, Memphis, TN, November.
- Trigg, B., and G.R. Reinhart. 1979. Pornography and religiosity: Establishing the standards of a southern community. A paper presented at the annual meeting of the Mid-South Sociological Association, Memphis, TN, November.
- Fly, J.W., R. Hamby, and G.R. Reinhart. 1979. Leisure and adjustment to retirement. A paper presented at the annual meeting of the Gerontological Society, Washington, DC, November.
- Reinhart, G.R. 1979. A review of *The children of prosperity: Thirteen modern American communes* by Hugh Gardner, in *Social Science Quarterly* 60(2), September.
- . 1979. Sociologists in action. An invited paper presented at the annual meeting of the Alabama-Mississippi Sociological Association, Birmingham, AL, January.
- Reinhart, G.R., and M. Binderman. 1978. Measurement of professionalism: An alternative approach. *The Southern Sociologist* 10(1), Fall.
- Reinhart, G.R. 1978. The interrelationship among social, political, and religious Attitudes of a southern parish. A paper presented at the annual meeting of the Southwestern Sociological Association, Houston, TX, April.
- . 1978. Social and environmental aspects of self-destruction and homicide. A paper presented at the annual meeting of the Southern Sociological Society, New Orleans, LA, April.
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- Reinhart, G.R., and M. Binderman. 1977. Measurement of occupational professionalism among sociologists: A behavioral approach. A paper presented at the annual meeting of the Mid-South Sociological Association, Monroe, LA, November.
- . 1977. Political polling. A paper presented at the Robert A. Taft Institute of Government Seminar, Birmingham, AL, July.
- . 1977. Systems theory. A paper presented at the annual meeting of the Northeast Alabama Sociological Association, Birmingham, AL, February.
- . 1976. Hegel's dialectics. A paper presented at the annual meeting of the Northeast Alabama Sociological Association, Cullman, AL, October.
- . 1976. Polling in political campaigns. A paper presented at the Robert A. Taft Institute of Government Seminar, Birmingham, AL, August.
- Wershow, H.J., and G.R. Reinhart. 1974. Life change and hospitalization - A heretical view. *Journal of Psychosomatic Research* 18(6).
- Linden, L.L., and G.R. Reinhart. 1971. Suicide by industry and occupation: A structural-change approach. A paper presented at the annual meeting of the Southern Sociological Society, Miami Beach, FL, May.
- Dudley, C.J., D. Kelley, E. Ott, and G.R. Reinhart. 1970. Mathematical models and sociological theory construction. A paper presented at the annual meeting of the Southern Sociological Society, Atlanta, GA.
- Reinhart, G.R. 1969. Pharmacy manpower: United States, 1966. In *Vital and Health Statistics*, PHS Publication No. 1000, Series 14, No. 2. Washington, DC, U.S. Government Printing Office.
- Saunders, J.V.D., and G.R. Reinhart. 1967. Demographic and economic correlates of development as measured by energy consumption. *Demography* 4(2). (Reprinted in: *Ensayos*. Facultad de Economia, Universidad Autonoma, de Nuevo Leon. Vol. 4, No. 1, Enero 1982.)

Memberships

American Evaluation Association
American Sociological Association
Southern Sociological Society

Computer Experience

Software: SPSS, SPSSPC+, MICROSAS, SAS, BMDP, LOTUS, dBASE

Hardware: IBM 360 and 370 Series, IBM PC/AT, HP3000

Pedro J. Saavedra

Education

School	Degree	Area of Concentration	Date
University of Virginia	Ph.D.	Educational Psychology	1975
Georgetown University	B.S.	Mathematics	1967

Employment

Employer	Title	Dates
Macro International Inc.	Technical Director	1984-
The Maxima Corporation	Senior Statistical Analyst	1984
Applied Management Sciences	Staff Associate	1980-1984
Loyola University of Chicago	Assistant Professor	1975-1980
University of Virginia	Graduate Instructor/Research Assistant	1971-1975
Louisa, Virginia	High School Teacher	1970-1971
University of Virginia	Graduate Instructor	1967-1970

Work Experience

Dr. Saavedra has extensive experience in survey sampling, error-prone modeling, estimation techniques, quality assurance, and statistical programming. Over the years, he has developed models using multiple linear regression, logic analysis, discriminant function analysis, canonical correlations, factor-analysis, sequential search, weighted least squares, principal components analysis, and other techniques. He has been involved in major statistical work associated with over one dozen national surveys, and has managed databases of over 200,000 records. Dr. Saavedra has used a variety of statistical packages including SAS, SPSS, OSIRIS, BMDP, and SOUPAC in a variety of environments (CDC, IBM, Wylbur, TSO, CMS, ISPF, and Hewlett Packard 3000). He also is familiar with microcomputer systems, and has used BASIC, Lotus 1-2-3, and other statistical software. He has developed extensive software across a variety of projects. As senior associate at Macro, Dr. Saavedra's assignments include the following:

- Designed and implement a sample of gasoline retailers for the Energy Information Administration to monitor the price of gasoline during the Iraq crisis. (1990)
- Modified and implemented the design for the EIA-782B since the current design has been used. The last five cycles this activity has been a major part of Dr. Saavedra's responsibilities at Macro. He has implemented major changes in the design and has been responsible for all software development and for the actual draw of the samples. (1985-1990)
- Developed a substitution scheme for the EIA-782 monthly survey. This consisted of a procedure to replace refusals on short notice. Dr. Saavedra used actual survey data and simulations, and developed two different schemes to be used under different sets of circumstances. (1988)

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- Drew samples for several cycles of the EIA-821 petroleum survey, and modified the design to take into account inaccuracies in the EIA-863 responses for residential fuel oil. (1986-1990)
 - Evaluated estimators for two petroleum surveys (EIA-782 and EIA-821) as a continuation of work done for two previous employers. Dr. Saavedra used simulations to evaluate Horvitz-Thompson, ratio and post-stratification estimators in these two surveys. (1986)
 - Developed a geographical stratification to supplement the EIA-782 design after uncovering urban-rural differences in petroleum prices in the EIA-782. (1989-1990)
 - Developed data substitution algorithms to update EIA-863 data with EIA-782 and EIA-821 data in order to avoid data inaccuracies associated with the EIA-863 form. (1988)
 - Was a member of a team developing a research design for an Unemployment Insurance Quality Control Program Improvement study. (1988)
 - Has served as a contact with Hispanic groups in an evaluation project for the Office of Substance Abuse Prevention. Dr. Saavedra is fluent in Spanish and sensitive to multicultural issues relating to Hispanics. (1990)
 - Conducted data analysis for an evaluation of substance abuse programs for OSAP. (1990)
 - Developed a sampling plan for a study of local WIC agencies for the Food and Nutrition Service. (1990)
 - Developed research design for a survey of Homeless Youth conducted for the Administration for Children, Youth and Families. (1989-1990)
 - Developed a sampling plan and conducted statistical analysis for a survey of Small Business Administration grantees. In the second year of this effort Dr. Saavedra is developing Markov models for the transition of projects from one stage of commercialization to another. (1988-1990)
 - Conducted analysis for an Evaluation of Integration of Technology for Instructing Handicapped Students at the High School Level for the Office of Special Education Programs. (1988)
 - Developed a long-term Quality Control Verification Plan for the Pell Grant System. This plan modified the procedures for selecting students whose income data would be verified by the institutions they attended. Dr. Saavedra added a multiyear component, the use of payment data, and the statistical prioritizing of selection criteria to the system. (1985-1986)
 - Developed an error-prone model using sequential search techniques to identify applicants who could be likely to be selected for verification of income. (1985-1986)
 - Chief statistician in the development and implementation of an evaluation plan for the Pell Grant Electronic Pilot. Dr. Saavedra participated in the development of an evaluation plan, the instrumentation, and the analysis. As part of this effort, he developed the sampling design for a nationwide survey of institutions of higher learning. (1986)
 - Developed and implemented an imputation algorithm for the preparation of a file from a sample of Pell applicants and recipients.

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- Conducted an analysis of dependency status changes in the Pell program across two program years.
 - Chief statistician in the preparation of reports presenting the effectiveness of various edits in the Pell Grant processing system. (1984-1987)
 - Developed and maintained sample databases for analytic purposes to provide technical support to the Pell Grant System. Developed short turnaround reports using the same databases. (1984-1987)
 - Prepared a module for training ED personnel in the use of the above database using SAS. (1987)
 - Assisted in developing a modified quality control plan for the data entry and data verification components of the Pell Grant processing system. (1987)
 - Developed instrumentation plan for national study of Teenage Health Teaching Modules for the Centers for Disease Control. Dr. Saavedra reviewed and analyzed data from existing instruments to identify appropriate items and estimate expected reliability of the instrument. (1986-1988)
 - Developed variance estimates for the National Children and Youth Fitness Study. In this effort, Dr. Saavedra developed programs to implement complementary balanced half-sample pseudo-replication as a variance estimation procedure. Dr. Saavedra also developed the sample design for a second study using first- through fourth-graders, and provided statistical analysis to support the quality control aspects of the training. (1984-1985)
 - Was part of the team which developed a sampling plan for the HUD Assisted Housing Income (re)certification study. Dr. Saavedra supervised the merging of four databases to form a frame, the formation of clusters and the basic sampling design. (1987-)
 - Dr. Saavedra was part of the team that developed the instrumentation and analysis plan for the HUD Assisted Housing Income (Re)certification study. Dr. Saavedra was primarily responsible for the design of statistical procedures and the operational definitions of various error dollar amounts. (1987-)
 - Reviewed statistical procedures in a study for the National Institute of Mental Health (NIMH) to examine the feasibility of extending the DRG reimbursement systems to the mental health area. (1985)
 - Developed a sampling plan and an evaluation plan for a grant application written under contract to National Medical Management, Inc. (1984)

As senior statistical analyst at the Maxima Corporation, Dr. Saavedra's assignments included the following:

- Developed and implemented sampling designs for two Energy Information Administration surveys. In this capacity, he designed software and managed the frame database for this effort. The work involved advanced and innovative designs in probability sampling, stratification, variance estimation, imputation of missing data, sample adjustment, sample rotation, and continuity analysis, as well as assessment of the results obtained in all of these areas. It also involved extensive programming skills, familiarity with statistical and data management software packages, and extensive use of Superwylbur Macros. (1984)

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- Provided analytical work for an Air Force contract involving multiple linear regression, principal components, and factor analysis. Dr. Saavedra used these techniques to relate various physical skill predictors to performance measures for Air Force personnel. (1984)
 - Conducted statistical work associated with a National Press Club Survey. (1984)

While with Applied Management Sciences, Dr. Saavedra's assignments included the following:

- Chief statistician on a contract to evaluate income certification and recertification in Department of Housing and Urban Development (HUD)-sponsored rental assistance programs. Dr. Saavedra used multiple regression and sequential search techniques to develop error-prone models for various kinds of recertification procedural errors. He also identified error sources, and evaluated statistically the effects of an intervention through a quasi-experimental design. Dr. Saavedra also produced national estimates of costs associated with various kinds of procedural errors in recertification of Section 8, Public Housing and Section 236 tenants. (1980-1983)
- Chief analyst and statistician on the error-prone modeling component of a study of School Meal participants conducted for the Food and Nutrition Services, U.S. Department of Agriculture (USDA). Dr. Saavedra developed an error-prone model using data obtained as part of the National Evaluation of the School Nutrition Program. Dr. Saavedra applied a sequential search technique to obtain and cross-validate models predicting misreporting in school meal applications. (1982-1983)
- Chief analyst and statistician on the error-prone modeling component of a study of Pell Grant applicants conducted for the Office of Student Financial Assistance (OSFA), Department of Education (ED). Dr. Saavedra was involved in all aspects of this study component from development of statistical design to conduct of analysis and report writing. Dr. Saavedra developed models using sequential search techniques through which error-prone applicants could be identified. This model was incorporated into the Pell Grant validation system. (1980)
- Chief analyst on optional tasks associated with the Pell Grant projects under the same OSFA contract. Among these tasks was the development of an error-prone model based on data from a previously conducted quality control study. Dr. Saavedra used a combination of discriminant analysis and sequential search to develop this model. (1980)
- Analyst and statistician in a project for the Social Security Administration (SSA). Dr. Saavedra developed an error-prone model using sequential search techniques which predicted disability cases where the Administrative Law Judge's decision would be overturned. (1983)
- Statistician and data analyst in an earlier phase of the above-mentioned EIA survey work. Dr. Saavedra was involved in the sampling design for earlier versions of the same surveys mentioned above, and created the software and drew the samples for both these efforts. (1982-1984)
- Statistician and data analyst on the data continuity analysis for the EIA-782 files, a project designed to monitor the transition between two sets of reporting forms, as part of a contract with the Department of Energy. This involved lead responsibility for construction and updating of an SAS database, formulation of analytical models for imputation, estimation and hypothesis testing, and implementation of those models. (1983)

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- Chief statistician on an evaluation of Maryland Vocational and Technical Education programs. This evaluation involved secondary data analysis requiring adjustments for missing values and noncommensurate scales. Dr. Saavedra applied principal components analysis, multiple classification analysis, and factorial modeling, among other techniques, to this task. The task was repeated 3 consecutive years. In addition, Dr. Saavedra prepared a sampling design for the integration of process and product evaluations, and aggregated 4 years of data into a composite database. (1980-1983)
 - Chief statistician in Department of Transportation (DOT) project developing a curriculum for preschool pedestrian safety. Dr. Saavedra analyzed accident data from two national and three State databases to determine urban/rural and age patterns of accidents involving preschoolers. (1981-1982)
 - Provided internal consultation and analytic support in the development of EIA-701 (Annual Survey of Active Solar Systems) files. Dr. Saavedra also assisted with the computer programs developed to create, update, and analyze the EIA-701 files. (1982)
 - Analyst and chief statistician to Department of Health and Human Services (HHS) project to design and conduct a demand survey for the need for before and after school care for children of compulsory school age. Dr. Saavedra's responsibilities included research design, instrumentation, identification of methodological issues, and data analysis. (1982)
 - Developed system for using sequential search techniques to evaluate effectiveness of combinations of rules designed to match names and addresses from multiple files for a Department of Energy contract. (1982)
 - Statistical and research design consultant across a variety of projects, particularly projects calling for complex multivariate research design. In this capacity, Dr. Saavedra also applied his familiarity with SAS, SPSS, OSIRIS, BMDP, and other statistical packages. (1980-1984)
 - In a variety of projects, successfully identified programming and other data processing errors, produced machine edits, and assessed the reliability and quality of the database used. (1980-1984)
 - Reviewed and assisted in the preparation of Spanish materials designed for use with non-English-speaking Hispanics. Dr. Saavedra is a native Spanish speaker and is sensitive to bicultural issues in survey research. (1980-1984)

As an assistant professor at Loyola University, Dr. Saavedra acted as a consultant on projects, and as a consultant and reader on doctoral dissertations. His role as consultant frequently included development of instrumentation, research design, analysis of data, and interpretation of results. (1975-1980)

During this period, he developed applied knowledge in the following statistical techniques: factor analysis, canonical correlation analysis, multiple linear regression, discriminant analysis, multivariate analysis of variance, general linear model, multidimensional scaling, principal components analysis, nonparametric statistics, and experimental design.

Dr. Saavedra taught graduate and undergraduate courses in statistics, factor analysis, computer applications, correlational methods, tests and measurements, educational psychology, child development, adolescent development, and human growth and development, and served in the Academic Uses of the Computer Committee. (1975-1980, Loyola)

He also served on the Evaluation Committee in charge of preparing the evaluation section of the Loyola University School of Education report to the Illinois Office of Education. In this regard, he developed questionnaires used to obtain feedback from alumni on the quality and effectiveness of the training they received at Loyola. (1979)

While pursuing doctoral studies in Educational Psychology, Dr. Saavedra served as a statistical and research design consultant to University of Virginia faculty and students. During this period, Dr. Saavedra's interest in Q factor analysis, and his introduction of the technique to faculty members, led to the technique being used in several student dissertations and faculty projects. In addition, he served as a statistical consultant to the University of Virginia Counseling Center, and was involved in data analysis related to a workshop conducted for Federal executives.

Presentations and Publications

Burton, R. and P.J. Saavedra. 1984. Multiple populations and volunteer data. Paper presented by first author to Washington Statistical Society. June.

Case, B., and P.J. Saavedra. 1978. Relationship of tough-mindedness related personality traits and nursing-specific personality variables. Northern Illinois Association for Educational Research Evaluation and Development: Second Annual Meeting. Bloomingdale, IL.

Drugan, E., and P.J. Saavedra. 1977. An empirical study of role conflict perceived in self and others by teachers in selected elementary and junior high schools. Northern Illinois Association for Educational Research, Evaluation and Development: First Annual Meeting. Bloomingdale, IL.

Errecart, M.T., M. Svilar, J.G. Ross, R.S. Gold, and P.J. Saavedra. 1987. National Children and Youth Fitness Study II. *Journal of Physical Education, Recreation and Dance* 58(9): 63-65.

Grieger, R.M., and P.J. Saavedra. 1972. One more visitation: A louder call for caution. *Interchange* 3: 91-93.

Hubbard, B., P. Saavedra, A.T. Lavin, J.G. Ross, and A. Lawrence. 1987. Development of instruments for evaluating school health programs. Presented to the annual meeting of the American School Health Association. October. Indianapolis, IN.

Lavin, A.T., B. Portnoy, J.G. Ross, and P. Saavedra. 1991. Enhancing curriculum implementation. *Journal of School Health*, 60(10), 35-38.

McCauley, L., and P.J. Saavedra. 1978. Perceived self-presentation of institutionalized adolescents as evaluated by significant others. Northern Illinois Association for Educational Research, Evaluation and Development: Second Annual Meeting, Bloomingdale, IL.

Monks, R.L., and P.J. Saavedra. 1981. The Anatomy of the Middle School Child. *American Middle School Education*. Summer.

Richards, H.C., and P.J. Saavedra. 1972. An exploration of Q factor analysis as a technique for research in child development. Second Southeastern Conference for Research in Child Development. Williamsburg, VA.

Richards, H.C., and P.J. Saavedra. 1972. Applications of factor analysis to problems in evaluation. BABEL conference at the Evaluation Research Center, University of Virginia, Charlottesville, VA.

Saavedra, P.J. 1966. On the construction of a Banach Space of Laplace transforms. Pi Mu Epsilon National Meeting, New Brunswick, NJ.

_____. 1975. A developmental study of cognitive complexity and the organization of personal constructs. Ph.D. dissertation. University of Virginia.

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- _____. 1976. A repertory grid investigation of pre-adolescent and adolescent sexism. First Midwest Regional Conference for Research on Women in Education, Chicago.
- _____. 1978. Rationale and strategies for the use of Q factor analysis in educational research. Northern Illinois Association for Educational Research, Evaluation and Development: Second Annual Meeting, Bloomington, IL.
- _____. 1978. The repertory grid as a pedagogical and research tool in educational psychology. Midwest Association of Teachers of Educational Psychology, Bloomington, IN.
- _____. 1979. Typological profiles of developmental interests among graduate students in educational psychology. Midwest Association of Teachers of Educational Psychology, Kent, OH.
- _____. 1979. Nonparametric factor analysis as a statistical short-cut for the educational practitioner. Midwestern Educational Research Association, Milwaukee, WI.
- _____. 1988. Linking multiple stratifications: Two petroleum surveys. Proceedings of the 1988 Joint Statistical Meetings, American Statistical Association Survey Section, 777-781.
- _____. 1989. Two substitution methods for the EIA-782 petroleum survey. 1989 Joint Meetings of the American Statistical Association, Washington, DC.
- Saavedra, P.J., M.T. Errecart, P.E. Weir, D. Herr, and F. Winters. 1990. Geographical stratification of petroleum retailers and resellers. 1990 Joint Statistical Meetings, American Statistical Association, Anaheim, CA.
- Saavedra, P.J., and D.M. Rosen. 1977. Factor analysis of a rating referral form developed and widely used in the State of Illinois. Northern Illinois Association for Educational Research, Evaluation and Development: First Annual Meeting, Bloomington, IL.
- Saavedra, P.J., and K.E. Smith. 1976. Further repertory grid investigations of sexism. Second Midwest Regional Conference for Research on Women in Education, Madison, WI.
- Saavedra, P.J., and P. Weir. 1991. A telephone survey of gasoline retailers drawn as a subsample of a national survey. Joint Meeting of the American Statistical Association, Atlanta, GA.
- Schneider, M.S., P.J. Saavedra, and A.M. Juhasz. 1978. Adolescent sexual decision-making: locus of control and personality variables. Northern Illinois Association for Educational Research, Evaluation and Development: Second Annual Meeting, Bloomington, IL.
- Watts, W.R., and P.J. Saavedra. 1978. Discriminant and convergent validity of three techniques for measuring student achievement of guidance objectives. Northern Illinois Association for Educational Research, Evaluation and Development: Second Annual Meeting, Bloomington, IL.
- Weir, P., and P.J. Saavedra. 1990. Superimposition of a geographical stratification on a complex design. 1990 Joint Statistical Meetings, American Statistical Association, Anaheim, CA.
- Zavadowsky, P., P.J. Saavedra, and R. Morgan. 1978. The relationship between levels of moral development and measures of autonomy, socialization and empathy at two critical age periods. Northern Illinois Association for Educational Research, Evaluation and Development: Second Annual Meeting, Bloomington, IL.

Elizabeth Sundberg

Education

School	Degree	Area of Concentration	Date
Indiana University	M.A.	Latin American Studies	1974
Cleveland State University	B.A.	Spanish and History	1973

Employment

Employer	Title	Dates
Macro Systems, Inc.	Associate	1988-
SRA Technologies, Inc.	Survey Specialist/Data Manager	1983-1988
Mathematica Policy Research, Inc.	Survey Coordinator	1982-1983
DBS Corporation	Research Analyst/Document Specialist	1981-1982
Opportunity Systems, Inc.	Survey Coordinator/Research Analyst	1977-1980
Opportunity Systems, Inc.	Coding and Editing Supervisor	1974-1976

Work Experience

Ms. Sundberg has over 17 years of progressive experience in survey and social science research data collection and management. She has supervised and coordinated efforts in such areas as AIDS, drug abuse, education, welfare programs, civil rights, energy and transportation for a diverse group of Federal and local agencies. She has experience in large- and small-scale training, interviewing, and all facets of mail, telephone, and onsite data collection. She has acted as a liaison with Federal, State, and local officials such as drug abuse treatment staff, school and welfare officials, as well as community leaders, students, and the general public.

Ms. Sundberg is currently serving as project director for the 5-year Youth Risk Behavior Survey for the Centers for Disease Control (CDC). In this capacity, she acts as liaison with State and local education agencies as well as national organizations to obtain survey clearances. She also develops and implements field data collection procedures; and hires, trains, and supervises field staff who collect data from 13,000 students in 50 counties in 24 States each year. She is responsible for developing and maintaining quality control on all survey operations.

Ms. Sundberg also provides ongoing writing, evaluation, and editing support for the High Risk Youth Project, Office for Substance Abuse Prevention. She analyzes and extensively edits program evaluation assessments and fact sheets for demonstration projects serving high-risk youth nationwide.

Ms. Sundberg recently worked on the Quality Control for Rental Assistance Subsidies project for HUD. As a Survey Specialist, she assisted in the planning, development, and organization of data collection procedures and forms. Over 400 housing projects under separate HUD programs are included in this large-scale data collection project.

Prior to joining Macro, Ms. Sundberg was a Survey Specialist/Data Manager at SRA Technologies, Inc. There, she served in survey management capacities on several projects, including the following:

- Field data manager for a study of the Seroprevalence of HIV Infection Among Intravenous Drug Users in Selected Cities for the National Institute on Drug Abuse. This \$1.3 million survey encompassed 7 cities and 17 sites. Ms. Sundberg obtained clearances; hired, trained, and supervised field data collectors; developed manuals, questionnaires, training materials and field procedures; and monitored data collectors during the multiyear data collection. Additional responsibilities included questionnaire editing; liaison with drug abuse clinics; recordkeeping; file cleaning and analysis; progress reports; monitoring expenditures; and overall quality control.
- Field coordinator and reviewer on a Medicaid Quality Control Review Project for the Health Care Financing Administration in California and New York. Ms. Sundberg developed training and field materials, conducted a 2-week onsite training session, completed actual field reviews and collateral contacts, and edited completed reviews for all sites. She also acted as liaison with the Social Security Administration, Veterans Administration, and local government and social service offices.
- Project director for a two-phase evaluation of insect/arthropod repellent formulations for the U.S. Army. Responsibilities included training and supervising staff; developing questionnaires, procedures, and project materials; managing project resources; selecting environmental monitoring equipment; maintaining environmental conditions in a test chamber; and making comparative analysis of results.
- Survey specialist and field coordinator for the Evaluation of Expedited Service in the Food Stamp Program for the U.S. Department of Agriculture (USDA). Data were collected from case files at 60 local Food Stamp offices nationwide. Ms. Sundberg's responsibilities included developing instrument and training materials; hiring, training, and supervising 18 field and coding/editing staff; developing the budget; performing quality control of the data collection and coding effort; and acting as liaison with State, local, and regional Food Stamp offices.
- Research analyst and telephone survey supervisor for the National Understanding and Acceptance of Occupant Protection Systems Study for the National Highway Traffic Safety Administration. Ms. Sundberg reviewed and analyzed data on accidents in which air bags were deployed. She supervised a staff of 20 who conducted interviews with 1,200 respondents nationwide concerning their knowledge and acceptance of air bags, automatic safety belts, and mandatory safety belt legislation.
- Research analyst for the AFDC Special Studies Project for the Office of Family Assistance in the Social Security Administration. Ms. Sundberg completed a literature review of State corrective action plans, project summaries, and statistics. She also coauthored task and research methodology reports, and conducted in-depth telephone interviews and field visits with State welfare personnel in order to assimilate detailed information for a highly descriptive 200-page catalog of Special Corrective Studies distributed to States.

Also for SRA, Ms. Sundberg developed eight questionnaires for use in the evaluation of the Kentucky Automated Certification and Issuance System for Food Stamps (KACIS) under contract to the Food and Nutrition Service (USDA).

Earlier, while a Survey Coordinator with Mathematica Policy Research, Inc., Ms. Sundberg provided liaison with Federal and State agencies on a survey for a U.S. Department of Agriculture Food Stamp Project. Ms. Sundberg supervised coding staff, coordinated field transcription activities, performed onsite data collection, and utilized a computer-assisted telephone interviewing (CATT) data entry system. She was responsible for document organization and control, quality control, coding procedures, and file cleaning. For another USDA survey for the Federal Commodities Program of alternative emergency food sources in local communities (i.e., over 325 food banks, pantries, and religious programs), Ms. Sundberg supervised two interviewers, conducted interviews, developed coding and editing procedures, and performed quality control on all data.

Also during this time, Ms. Sundberg conducted in-depth (200-question) interviews and coordinated field activities for 15 interviewers for a survey of recent Social Security recipients. She also conducted extensive telephone interviews for a National Survey on Youth. In addition, for the U.S. Department of Education, Office of Civil Rights, Ms. Sundberg developed and wrote a 200-page training manual, and conducted training sessions for Federal employees in the use of the Automated Case Information System (ACIMS) computer system.

At Opportunity Systems, Inc., Ms. Sundberg worked as a Survey Coordinator/Research Analyst and Coding and Editing Supervisor on several projects. Ms. Sundberg managed two in-house surveys for the Department of Transportation (DOT) on Seat Belt Usage and the tabulation of Fuel Economy logs kept by DOT employees. Her responsibilities included supervision of coding/editing staff, quality control, data extraction and reduction, and telephone followup of respondents. The total number of respondents interviewed for these surveys was 1,150. On another project, she supervised coding and editing activities for the Special Facilities Survey and Elementary and Secondary School Civil Rights Surveys for the U.S. Department of Health, Education and Welfare. She performed staff training and supervision, mailout, nonrespondent followup, and editing and review of computer printouts. She also provided technical assistance for State and local agencies, often handling over 50 daily telephone requests.

Ms. Sundberg additionally participated in a number of information processing assignments during this time:

- Manager of two large-scale projects under contract to the Office for Defects Investigation, DOT, involving the Firestone 500 and Uniroyal tire recalls. This involved processing over 32,000 documents provided by consumers, advocacy groups, Federal agencies, and the two tire companies for use by DOT in subsequent recall campaigns. Ms. Sundberg's responsibilities included supervision of coding/editing staff, quality control, design of survey procedures and coding materials, data reduction, liaison with data processing and DOT personnel, and production of progress reports. She also implemented a comprehensive data file system for DOT, inputting several thousand records to the files monthly, including recall notices, consumer complaints, and industry bulletins. Ms. Sundberg provided supervision of coder/editors, quality control, design of survey and coding procedures, and data extraction and reduction.
- Manager for six contracts for the DOT's Office for Defects Investigation, processing thousands of consumer complaints and company documents in the investigation of possible safety defects. Specific responsibilities included supervision and training of coding/editing staff; quality control of staff and keypunch output; design of coding materials; liaison with data processing and DOT personnel; and manual review of computer printouts, progress reports, and file documentation. Ms. Sundberg also participated in data reduction tasks involving coding and editing information gathered by onsite vehicle inspection teams for the Idaho Department of Motor Vehicles. In addition, Ms. Sundberg provided proofreading services for the National Highway Traffic Safety Administration involving review and correction of publications concerning safety regulations and standards for school buses, tires, and brakes; vehicle equipment testing procedures and documentation of recall campaigns.

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- Liaison to State and local officials applying for Community Energy Block grants. Ms. Sundberg abstracted information from residential and commercial energy efficiency publications published by the Department of Energy for the White House Clearinghouse for Community Energy Efficiency. She also produced several data books on Florida Resource Recovery activities for the U.S. Department of Energy. This was a pilot project for the compilation of technical energy data into a format acceptable to both technicians and laypersons.

Publications

Sundberg, E. 1987. *Seroprevalence of HIV infection among intravenous drug users in selected cities field manual*. SRA Technologies, Inc.

———. 1986. *National Understanding and Acceptance of Occupant Protection Systems*. Final report to the National Highway Traffic Safety Administration. SRA Technologies, Inc.

Sundberg, E., and Dent, Mary K. 1985. *Catalog of special studies for AFDC corrective action*. SRA Technologies, Inc. September.

Sundberg, E. 1984. *Evaluation of Expedited Service in the Food Stamp Program: Data Collection Report*. SRA Technologies, Inc. April.

———. 1982. *Automated case information management system training manual*. Mathematica Policy Research, Inc. Paper prepared for the Office of Civil Rights, U.S. Department of Health and Human Services. October.

———. 1980. *Resource Recovery in Florida*. Report to the U.S. Department of Energy, Community Technology Systems Branch. Opportunity Systems, Inc. July.

———. 1980. *Reports and publications dealing with economic and related analysis of energy-related technologies*. Databook prepared for the U.S. Department of Energy. Opportunity Systems, Inc.

CLASS II

Rafael F. Delgado

Education

School	Degree	Area of Concentration	Date
George Washington University	M.B.A.	Information Systems Management	1983
University of Richmond	B.S.	Business Administration, Management Systems and Economics	1980

Employment

Employer	Title	Dates
Macro Systems, Inc.	Associate	1989-
Macro Systems, Inc.	Consultant	1984-1989
Office Automation, Inc.	Business Manager	1983-1984
Landmark Services, Inc.	Staff Accountant	1980-1983

Work Experience

Mr. Delgado currently serves as the Assistant Project Manager and Senior Systems Analyst for Macro's activities on the Pell Grant Application Processing System project for the Department of Education. Macro is responsible for systems requirements analysis, software testing and certification, quality control, and management information systems design and analysis, under subcontract to National Computer Systems. For the past 6 years he has been involved in all phases of this project. His primary responsibilities include general staff administration and employee training in all areas of system development, software testing, and system certification. As part of the management information systems work on this project, he has assumed lead roles in system requirements analysis; development of quality assurance plans; evaluation of quality control operations; development of test plans, testing of system edits, formula computations, and the management information system; development of automated software testing tools; and conducting system tests.

Mr. Delgado has served for the past 2 years as the Development Coordinator for the Multiple Data Entry and Needs Assessment Servicers (MDE/NAS) Certification project for the Department of Education. This activity involved providing system specifications, technical support, and test data for 100 organizations nationwide to use in the development of their Pell Grant needs assessment systems. This effort served to certify that each participating organization was capable of producing financial aid need results that were identical to those produced by the Pell Grant Central Application Processing System. He supervised the review of all system evaluation reports and provided technical support directly to each MDE/NAS organization in order to resolve all outstanding discrepancies. He also served as the liaison between each participating organization and the Department of Education for the resolution of all system development problems.

Mr. Delgado will serve as the project manager under a new agreement with the NCS Information Services Division, to provide software testing services on a new system development project for the Department of Housing and Urban Development. The system is called the Multifamily Tenant Characteristics System (MTCS) and it will be used by HUD as a research tool to study economic and demographic information

about tenants in assisted rental housing programs and public housing facilities monitored by HUD. The 5-year contract calls for Macro to provide ongoing system quality assurance as well as statistical analysis once the system is developed.

Prior to this, Mr. Delgado served as the lead analyst on a project for National Computer Systems to evaluate their Pell Grant application data input process and their related quality control procedures. This project involved the investigation of all conditions related to the data entry area including environmental conditions, personnel management approaches, and performance measurement techniques. The study relied heavily on utilizing statistical quality control methods and evaluation of the information provided from all internal reports designed to measure the success of their data input efforts. The conclusion of the study led to a significant modification in the methods being used to train and evaluate employees, along with a new understanding of the measurement of their error rate relative to industry standards for data input.

Mr. Delgado previously worked on a task order to assist the Department of Education in reviewing the Pell Grant Disbursement system. His involvement included reviewing the testing procedures, testing output of the prime software contractor, and assisting with the test plan and test case development for use by the Department of Education in testing the Disbursement System.

Mr. Delgado has both supervised and conducted all software testing activities related to the development of the Pell Grant Electronic Gateway system. This system builds from the existing Application and Disbursement systems and provides a communication network for the transmission of applicant grant eligibility information and aid payment documents between participating institutions and both processing facilities. He has been involved in the development of the test plan, testing of the system's data edits, network control functions, and management information system reports.

As part of the testing and quality control efforts for all of these projects, Mr. Delgado has used Lotus 1-2-3 to develop test case simulators for testing the SAI and FC computation formulas. This simulation capability is also used by NCS in the conduct of their internal quality control activities for the application processing system. He has also been involved in training Department of Education staff on how to conduct software testing, software quality assurance, and in utilizing personal computers as part of their software testing and software quality assurance efforts.

Mr. Delgado has served as a lead analyst on several software development and system integration projects and has been involved in all of Macro's activities as a Software Supplier and Value-Added Reseller for Hewlett Packard computer systems. He is currently involved in the activities to develop and market a major business management system which is designed to operate on the HP3000.

The Warehouse Control System (WCS/3000) is designed to facilitate paperless processing of all warehouse transactions using an HP3000 and wireless remote terminals from LXE, Inc. The system allows the facility management to direct the basic activities of each worker while the system automatically assigns all of the operational tasks to the appropriate workers. Mr. Delgado's responsibilities include managing the system documentation project, software training, and system testing for each installation. He has also participated in system revisions and proposed changes to the system design.

Mr. Delgado participated in the development of a management plan and administrative procedures planning for the operation of the U.S. Department of Agriculture, Landover Distribution Center. His responsibilities included identification of USDA reporting requirements and software system capabilities to meet these requirements. His responsibilities also included documentation of existing software system capabilities and reporting options to develop appropriate procedures so that the facility management can fully utilize the computer system capabilities to operate the facility and document performance for the Department of Agriculture. As a separate task order under this contract, he participated in an evaluation and documentation of existing government procedures for the facility.

Mr. Delgado also is involved in similar facility management activities for the Farmer's Home Administration at the St. Louis Area Support Center. His responsibilities include staff selection, training, and management planning for operating the facility.

Mr. Delgado also has participated in a project for the Assistant Secretary of Planning and Evaluation in the Department of Health and Human Services to develop the "Databook on the Elderly." The databook provides statistical data, graphics, and narrative data on the elderly using Lotus 1-2-3.

As part of Macro's continuing efforts in training and employee development, Mr. Delgado has conducted, organized, and designed courses on the use of a personal computer and personal computer software such as Lotus 1-2-3.

As a Business Manager with Office Automation, Inc., a retail computer and office equipment dealer, Mr. Delgado integrated an automated accounting system, thereby increasing the organization's overall efficiency. This involved a conversion from a manual system to a computerized information system, and included a system upgrade to a more powerful MBSI accounting information system. Additionally, he was responsible for all functions related to order processing for sales and service of computer equipment, and had primary responsibility for supervision of data entry and delivery staff, inventory control, accounts receivable and payable, and procurement of equipment.

Earlier, Mr. Delgado served as a Staff Accountant for a sightseeing company operating under a \$4 million a year Federal concession agreement. As such, he was responsible for internal security and cash control. He supervised a staff of 7 cashiers and 40 ticket sellers, handling up to \$35,000 daily. He also developed policies and procedures for all cash handling operations, as well as internal performance reports and forecasts based on accounting and ridership data. In addition, Mr. Delgado was responsible for accounts receivable and accounts payable. In this position, Mr. Delgado operated an IBM small business accounting software system.

Computer Experience

Hardware: IBM 3084, Hewlett Packard 3000, IBM PC, HP150, HP Vectra

Software: Lotus 1-2-3, dBase III+, WCS/3000, MCBA Accounting System, BIDS Accounting System, MBSI Accounting System, Volkswriter, WordPerfect, Wordstar, ABT Project Manager Workbench, TDP, VPLUS, IMAGE, QUERY, Timeline Project Management System, TSO, CICS

Seminars

Software Quality Assurance, McCabe & Associates, Inc.

Software Testing, McCabe & Associates, Inc.

Management Problems of the Technical Person in a Leadership Role, Pryor Seminars, Inc.

Honors

President's Award for Excellence, Macro Systems, Inc., 1987.

Carolyn DeMeyer Harris

Education

School	Degree	Area of Concentration	Date
Virginia Tech	Ph.D.	Research and Evaluation	1989
University of Louisville	Rank I	Learning/Behavior Disorders	1982
University of Louisville	M.A.T.	Social Sciences	1972
Indiana University	B.S.	English and Social Studies	1971

Employment

Employer	Title	Dates
Macro Systems, Inc.	Senior Manager	1990-
Macro Systems, Inc.	Associate	1988-1990
Macro Systems, Inc.	Consultant	1986-1988
Human Resources Research Organization	Research Scientist	1983-1986
Jefferson County (KY) Public Schools	Teacher (Secondary, LD)	1979-1983
Jefferson County (KY) Public Schools	Teacher (Elementary, EMR)	1974-1979
Louisville (KY) Public Schools	Teacher (Middle, EMR)	1972-1974

Work Experience

Dr. Harris has broad experience in all phases of instructional development, including needs assessment, production for varied types of media such as interactive videodisc, videotape, scriptwriting and story boarding, and evaluation. She has a background in educational research with a particular focus on qualitative methods. Her areas of specialization include instructional design, evaluation, test development, and computer graphics. Her administrative experience includes direction of several product development projects and a computer-assisted instruction evaluation and 9 years as program manager in special education departments at the elementary, middle, and high school levels.

Dr. Harris currently serves as project director on the OSEP-funded project, "Making Administrative Decisions About Technology by Examining Promising Instructional Practices." This project is in the data collection phase, and is investigating innovative instructional practices that incorporate technology in working with students with disabilities. These practices and information about the administrative practices that promote them will be presented in a nationwide teleconference in 1992.

Dr. Harris is principal investigator on a Phase II SBIR contract from NIDRR, "Development of an Interactive Videodisc Program for Use by Mildly Cognitively Impaired Adolescents to Build Decision-Making Skills as Related to Risky Behaviors." This project used four focus groups to gather critical information from sixth graders, eighth graders, teachers, and parents. The instructional designs for scripts are under development. Dr. Harris also serves

on the Design Team of another Phase II SBIR, "Development of an Interactive Videodisc Program for Use by Preschool Children to Explore Early Math and Science Concepts." Telephone interviews with a dozen experts in early childhood education, math and science concepts, and educational technology were conducted to provide the guidance for this study. Again, the instructional designs are under development.

Dr. Harris was the project director of an ED/OSEP-funded grant, "Using Interactive Videodisc in Evaluating and Training Job-Related Math Skills." The first, single-sided videodisc provides direct student access to a series of vocational simulations in which specific assessment probes are used to determine the existing job-related math skill level. A second, double-sided videodisc provides related remedial instruction in the math skills. A record keeping program tracks individual student data. The final package, "Working with Math," which was developed with the TenCORE Authoring Language for the IBM InfoWindow system, received a 1991 Merit Award from the Nebraska Videodisc Awards. The program is currently being evaluated by educational materials vendors for publication.

Dr. Harris was project director on the Office of Special Education Programs (OSEP) research grant studying special education administrative involvement in computer implementation. The second phase of this project used case study methodology to more closely examine four school districts sampled in Phase 1 to identify effective practices and processes for technology implementation. The study's findings and information from both phases will be incorporated in the *Guidebook for Special Education Administrators*, which will include concrete examples of the practices found to be effective.

Dr. Harris served as the deputy project director of the ED/OSEP-funded research project, "Using Simulation Technology to Promote Social Competence of Handicapped Students." The materials are designed as an integrated package that delivers the information through videotape simulations, interactive computer software, and a detailed instructor's manual. Dr. Harris assumed primary responsibility for supervision of the field test, which was conducted prior to the research study to measure the program's effectiveness. She worked with several private companies to manage the production of instructional and training video tapes, including site identification, technical assistance, content consultants, scriptwriting, props, approval editing, and still photography. The program, "Social Skills on the Job," is available commercially from American Guidance Service.

Dr. Harris served as site coordinator for the OSEP-funded research project, "Evaluation of the Integration of Technology for Instructing Handicapped Students" during Phase I. This effort focuses on the effective integration of technology into the mainstreamed special education curriculum at the high school level. This project will lead to development of a model system based on effective practices for dissemination to school districts nationwide.

Dr. Harris spent 4 years with HumRRO and worked primarily on military training. She was involved in a project to develop an integrated system to assess and enhance Air Force basic skills in electronics trouble shooting jobs. She reviewed Department of Defense basic skills programs to provide a foundation for the cognitively oriented approach used for this developmental effort. For the basic skills training program, she developed a design specifications subsystem, which included a course catalog and training handbook.

Other projects involved computer-assisted instruction and computer-controlled videodisc systems. Dr. Harris directed a project to evaluate a computer-assisted instructional system being used in the Chapter I Program of a metropolitan public school district. She was involved in the organization, design, production, and evaluation of land navigation and remedial tasks computer-based instruction that was developed on the MicroTICCIT authoring and management system.

While working on a project to evaluate the Spatial Data Management System for delivering instruction in learning strategies, problem-solving, and decisionmaking skills, she designed and produced off-line training materials that corresponded to the videodisc instruction.

She conducted background research for an evaluation of the integration of military occupational and training data into states' computerized career information delivery systems, and prepared the integration reports for selected states.

In her work on a project to improve the selection, classification, and utilization of Army enlisted personnel, Dr. Harris developed MOS-specific knowledge tests, documented a soldier's movement from entry through first tour to determine types of personnel decisions and actions, researched and compiled a technical reference library on utility measurement, prepared records collection forms and guidelines, and developed a training presentation and packet for data collectors.

Dr. Harris was a public school teacher for 12 years in the Louisville and Jefferson County, Kentucky area. She was Program Chair of an 11-unit special education department, where she directed teachers in guidelines for Public Law 94-142, Education of the Handicapped Act; conducted workshops on mainstreaming, referral procedures, and the significance of Public Law 94-142 to regular classroom teachers; implemented and monitored a system of continuing communication and interaction between special and regular classroom teachers; instituted the use of adopted textbook tapes from *Recordings for the Blind* for use by mainstreamed and/or disabled readers; implemented classroom programs in precision teaching, student attitudes and values clarification, and prevocational learning; designed and conducted parent workshops to modify both parent and child behaviors; and prepared budgets, allocated funds, and maintained accounts.

Dr. Harris also was Program Chair of an eight-unit special education department, where she directed teachers and principal in state interpretation of and guidelines for Public Law 94-142; conducted a workshop in establishment of uniform procedures for compliance with Public Law 94-142; directed teachers in classroom management techniques and organization methods; standardized a sequence of curricula for the various special student skills levels; and prepared budgets, allocated funds, and maintained accounts.

She was Program Chair of a 3-unit special education department, where she developed and monitored a program of participation by special students in elective classes; designed a prevocational sampling program for junior high school students; organized a support group for inner-city special education teachers; developed the initial phase of an educational program for introverted special students; and prepared budgets, allocated funds, and maintained accounts.

Publications

Robey, E.P., K. Wholey, and C.D. Harris. 1990. *Final report - Phase I Investigation of interactive technologies for a risky behaviors program for mildly mentally handicapped youth*. Silver Spring, MD: Macro Systems, Inc.

Colker, L.J., E.P. Robey, and C.D. Harris. 1990. *Final report - Phase I Investigation of interactive technologies for early math and science concepts for preschool children*. Silver Spring, MD: Macro Systems, Inc.

Robey, E.P., A. Thomas, and C.D. Harris. 1990. *Final report: Studies of special education administrative involvement in computer implementation*. Silver Spring, MD: Macro Systems, Inc.

Harris, C.D., E.P. Robey, K. Wholey, and R. Pels. 1989. *Final report: An interactive videodisc program to evaluate and train job-related math skills for transition*. Macro Final Report, Silver Spring, MD: Macro Systems, Inc.

Harris, C.D. 1989. Examination of the implementation of a job-related social skills program in high school classes for students categorized as cognitively impaired: A case study approach. Doctoral dissertation, Virginia Polytechnic Institute and State University, Blacksburg, VA.

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- Harris, C.D. 1989. Social skills on the job. *Closing The Gap*, 8(1):4.
- Appell, L.S., M.V. Lichtman, C.D. Harris, and K. Wholey. 1989. *Final report: Using simulation technology to promote social competence of handicapped students*. Silver Spring, MD: Macro Systems, Inc.
- Harris, C.D., E.P. Robey, and K. Wholey. 1989. Assessing and training job-related math skills via an interactive videodisc program. *Closing The Gap*, 7(6):14.
- Hanley, T.V., L.S. Appell, and C.D. Harris. 1988. Technological innovation in the context of special education systems: A qualitative and structured research approach. *Journal of Special Education Technology*, 9(2), 98-108.
- Riegelhaupt, B.J., C.D. Harris, and R. Sadacca. 1987. The development of administrative measures as indicators of soldier effectiveness. *ARI Technical Report 754*, Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.
- Harris, C., et al. 1986. *Development of an integrated system to assess and enhance basic job skills: training specifications and prototype subsystem plan*. HumRRO Draft Interim Report, Alexandria, VA: Human Resources Research Organization.
- Elder, B.L., C.D. Harris, and C.M. Knerr. 1986. Remedial computer-based testing and training for M1 tank commanders. Paper presented at the Annual Meeting of the Human Factors Society, October, Dayton, OH.
- Harris, C.D., R. Sadacca, and B. Hunter. 1986. Evaluation of the Dolphin Computer-Assisted Instructional System. Paper presented at the Annual Meeting of the American Educational Research Association, April, San Francisco, CA.
- Harris, C.D., et al. 1986. *Remedial interactive videodisc computer-assisted instruction for tank commanders*. HumRRO Final Report FR-PRD-86-9, Alexandria, VA: Human Resources Research Organization.
- Harris, C.D., et al. 1985. *Development of interactive videodisc training for Army land navigation skills*. HumRRO Final Report FR-PRD-85-17, Alexandria, VA: Human Resources Research Organization.
- Harris, C.D., et al. 1985. *Development of parallel learning strategies curricula using videodisc and standard off-line formats*. HumRRO Final Report FR-PRD-85-16, Alexandria, VA: Human Resources Research Organization.
- Harris, C.D., et al. 1985. *Integration of military occupational and training data into eight computerized career information delivery systems*. HumRRO Interim Report IR-PRD-85-2, Alexandria, VA: Human Resources Research Organization.
- Harris, C.D., et al. 1984. *Development of interactive videodisc instruction for problem-solving and armor skills*. HumRRO Interim Report, Alexandria, VA: Human Resources Research Organization.

Products

Social Skills on the Job
Working with Math

Computer Experience

TenCORE, PILOT, and MicroTICCIT - Authoring

SAS - (Statistical analysis)

Wide variety of Macintosh and PC applications software including graphics, word processing, desktop publishing, spreadsheet and database

Professional Affiliations

American Educational Research Association

American Evaluation Association

Association for the Development of Computer-Based Instructional Systems

The Council for Exceptional Children

Technology and Media Division

Society for Applied Learning Technology

Helene Jennings

Education

School	Degree	Area of Concentration	Date
Stanford University	M.A.	Latin American Studies	1967
Occidental College	B.A.	Diplomacy and World Affairs	1965

Employment

Employer	Title	Dates
Macro Systems, Inc.	Research Specialist	1990-
Macro Systems, Inc.	Consultant	1990
Westat, Inc.	Research Associate	1986-1989
Brownstein, Zeidman & Schomer	Analyst for Trade and Legislation	1985
Stein, Shostak, Shostak & O'Hara	Analyst for Trade and Legislation	1983-1984
Mana, Inc.	Writer/Researcher	1979-1980
Escola Graduada	Social Studies Teacher	1973-1975
Hanover High School	Social Studies Teacher	1968-1972
Holt, Rinehart & Winston	Curriculum Developer	1971-1972

Work Experience

As a research specialist in Macro's Applied Research Division, Ms. Jennings serves as project manager for the telephone followup survey of participants in Maryland's AFDC employment and training program, Project Independence (formerly Investment in Job Opportunities). She is responsible for monitoring the progress of the study of program terminees 6 and 12 months after they leave the program to collect data on program satisfaction and post-program outcomes measuring job retention, earnings, and dependency on public assistance. She also designed the 12-month questionnaire based on analysis of initial data from the 6-month interviews and further information needs requested by the Department of Human Resources.

Currently Ms. Jennings is also a member of the site visit team conducting case study investigations to document promising practices in the use of technology for at-risk and special education students for the Department of Education. After creation of a large database of potential sites of exemplary applications of technology to learning situations, twelve sites were selected for field visits. The team is conducting interviews and observations in two- or three-day visits. The documentation of the practice includes the collection of printed materials, tape recording of interviews, and still and video photography. A variety of dissemination methods will be employed in the second year of the project.

She recently served as a principal analyst in the database development and consistency analysis of the results of Unemployment Insurance quality control data collection over a 25-week period from a demonstration project involving six states plus regional and national office monitors. Ms. Jennings is currently working on the design of

a performance measurement review system to integrate the major service areas of the Unemployment Insurance Service.

Previously she performed survey research and data analysis for the Labor Studies and Social Welfare Group at Westat. She gained experience in the conduct of research through the operation of a rapid response mechanism for the Employment Training Administration of the Department of Labor. She carried out studies through direct contact with State- and SDA-level administrators, literature reviews, use of existing databases for analysis, and the supervision of data collection by telephone interviewers. Her major contributions were on studies of low enrollments in dislocated worker projects, training for child care workers in JTPA Title II-A programs, service to displaced homemakers through JTPA Title III programs, and database analysis for studies of JTPA-AFDC linkages and post-high school apprenticeship training.

Ms. Jennings has expertise in a variety of other employment and training issues. At Westat she served as assistant project director for the longitudinal data collection involving about 13,000 eligible food stamp recipients as part of evaluation of the Food Stamp Employment and Training Program for the Food and Nutrition Service (FNS). She had primary responsibility for monitoring the participant survey through three waves of data collection using both telephone and in-person interviews. Additionally, she contributed to the design of three questionnaires and produced supplemental instruments to facilitate interviewing and reporting, developed training packages, conducted interviewer training, and created databases for file updating and production of clean and edited data tapes for analysis. In an evaluation for the Department of Labor on the Senior Community Service Employment Program (SCSEP), she provided oversight of the data collection and analysis of the outcome data from the participant follow-up study.

She was the principal researcher for the JTPA Performance Standards Implementation Study. She was responsible for the development of the discussion manual and data collection forms for interviews with State-level JTPA staff on performance standards setting for PY 1984 and PY 1985. She analyzed the compliance reviews for each State and followed up with data collection and detailed interviews to provide DOL with a complete database and statistical analyses for the fifty States and the District of Columbia.

Ms. Jennings was the lead analyst for the 52-office mail/telephone survey of State Unemployment Insurance System (UIS) Benefit Payment Quality Control programs. She prepared the findings related to the process study of program implementation and operational issues at the state level.

Ms. Jennings also served as field director for a DHHS study of adoption assistance impact and outcomes. She recruited staff and supervised the abstracting of adoption and foster care records by the contractor's field staff and local welfare agency personnel to provide the sample for the interview phase of the study.

In previous employment, Ms. Jennings tracked legislation involving U.S.-Mexican trade relations for two law firms. She evaluated issues and congressional positions; developed strategies to gain support of legislators and appropriate committees; and wrote summary analyses for clients.

For the National Park Service, Ms. Jennings researched and authored two films on Glen Echo and the Chesapeake & Ohio Canal. Using primary and secondary sources, she researched the history and present operation of these two sites; located and assembled historic and contemporary photographs; designed a filming plan for turning still photos into video format; and wrote scripts for voice-over narration.

From 1968 to 1975, Ms. Jennings taught social studies in two high schools: Hanover High School in New Hampshire and Escola Graduada, an American school in Sao Paulo, Brazil. At Hanover she participated in a faculty committee that assessed course organization and curriculum in the social science field. Based on this review, the departmental course offerings were redesigned and the curriculum modified to include performance objectives and to implement skill building sequences that were developed.

In 1971, Ms. Jennings received a grant from a local foundation to develop the use of the computer in high school social studies courses. Utilizing the large databases in the Dartmouth College computer network, she designed and tested a 3-week unit for incorporation into the curriculum. She produced a student manual that was subsequently published by Dartmouth College for use in their introductory classes (*Analyzing Cross-Tabulations with IMPRESS*, Hanover, 1972).

For Holt, Rinehart & Winston, Ms. Jennings prepared materials to accompany the U.S. history textbook, *Challenge of America*. She annotated a two-volume teacher text to provide a complete teaching package of instructional techniques, activities, and questions to promote inductive reasoning. She wrote an introductory chapter to outline instructional approaches and to recommend supplemental books and audiovisual and other nonprint materials, developed several paperback activity workbooks, and prepared chapter test booklets for assessment.

Memberships

Chair, Committee on Education and Human Services, Upcounty Advisory Board (appointed by County Executive)

Chair, Demographic Research Committee, Montgomery County Public Schools

Publications

Unemployment Insurance Quality Control Consistency Study, with Robert F. Cook, et al., U.S. Department of Labor, November 1990.

Evaluation of the Unemployment Insurance Quality Control Program, with Robert F. Cook, et al., U.S. Department of Labor, Unemployment Insurance Service, December 30, 1988.

The Senior Community Service Employment Program: Participant Selection, Program Experience and Outcomes, with Kalman Rupp, et al., prepared under a subcontract for the Department of Labor, July 1986.

"The Long Walk: Preservation of the C & O Canal" and "Glen Echo Celebrates People" (film scripts), prepared for the National Park Service, 1982.

Curriculum package (annotated 2-volume text for teachers, two paperback activity workbooks, chapter test booklets) for *Challenge of America* by Okun and Bronz, New York: Holt, Rinehart & Winston, 1972.

Analyzing Cross-Tabulations with IMPRESS (student manual). Hanover, NH: Dartmouth College, 1972.

Donald E. Mathes

Education

School	Degree	Area of Concentration	Date
Johns Hopkins University, School of Advanced International Studies	--	Post-Graduate Studies on Brazil	1973-74
Washington University	M.A.	International Relations	1962
Colgate University	B.A.	Political Science	1955

Employment

Employer	Title	Dates
Macro Systems, Inc.	Senior Associate	1990-
Self Employed	Independent Consultant	1988-1989
U.S. Information Agency	Director, Policy Guidance Staff	1987
The White House	Assistant Press Secretary	1986
U.S. Information Agency	Deputy Director, Policy Staff	1981-1985
U.S. Department of State	Director, Office of Press and Public Affairs, Bureau of Inter-American Affairs	1979-1981
U.S. Consulate General, Sao Paulo, Brazil	Director, U.S. Information Service	1974-1979
U.S. Foreign Service	Numerous positions	1961-1974

Work Experience

Mr. Mathes has had broad experience as a U.S. Foreign Service Officer and as a consultant to international organizations, including the following:

U.S. Department of State

- Researched and wrote country reference documents on Bolivia and Paraguay following visits to assess public awareness resources and capabilities. Both documents were used as basis for local anti-narcotics campaigns.
- **Director, Office of Press and Public Affairs, Bureau of Inter-American Affairs**--Served as the Bureau's spokesman on Latin American issues; advised the Assistant Secretary on media matters and press relations. Conducted extensive briefings of the media on major issues. Wrote daily press guidance for the Department spokesman and the Secretary of State. Planned, directed, and supervised public affairs and media relations of the Bureau. Spoke before audiences nationwide on Latin American issues, gave television and press interviews, briefed editorial boards and key columnists, maintained close contact with a variety of media.

Organization of American States

Designed, organized, and coordinated the first major international conference on narcotics and public awareness, attended by 70 participants from 12 different countries. Supervised the conference on-site in the Dominican Republic.

U.S. Information Agency

- Co-edited the first International Narcotics Information Library, a full-text database for use of U.S. Embassies and interested professionals around the world.
- **Director, Policy Guidance Staff**--Responsible for ensuring that all USIA media and overseas operations were understood and operated within the latest policy guidelines from the State Department and the White House. Also, designed and established first guidelines for the rapid response staff--a new office responsible for coordination of official U.S. responses to critical issues, hostile propaganda, and disinformation--and directed its initial operations.
- **Deputy Director, Policy Staff**--Supervised a senior staff of 26 persons who produced policy and program guidance for posts in 129 countries. Provided the policy link between USIA and the White House, NSC, State, and DoD on key issues. Wrote the U.S. public affairs strategy on a major international crisis. Chaired interagency groups on Central America and narcotics issues. Wrote portions of the Federal Strategy on the Prevention of Drug Abuse and Drug Trafficking. Wrote the White House-approved USG public affairs strategy on yellow rain.

The White House, Washington, D.C.

Assistant Press Secretary--Wrote press guidance for the White House Press Secretary and advised on major international issues; functioned as a White House spokesman, briefing the White House press corps and responding to their inquiries; arranged interviews with the President and other senior White House and NSC staff; coordinated support for the international press at the Tokyo Summit.

U.S. Consulate General, Sao Paulo, Brazil

Director, U.S. Information Service--Managed all U.S. Government public affairs activities in southern Brazil. Directed a staff of 28 professionals. Managed a conference/seminar program with \$1.5 million annual budget. Maintained productive contact with the highest level of Brazilian opinion makers and officials, including the governors of three States, editors and publishers of Brazil's major newspapers and magazines, business executives and politicians, educators and intellectuals.

Other U.S. Foreign Service positions held by Mr. Mathes include the following:

- Special Assistant to the Director of Latin American Affairs, USIA, Washington, D.C.
- Press Attache, U.S. Embassy, Lima, Peru
- Director, joint civilian-military information team in My Tho, South Vietnam. Decorated by the U.S. and South Vietnamese Governments
- Director, U.S. Information Service, Hyderabad, India
- Assistant Information Officer, U.S. Information Service, Madras, India
- Public Affairs Trainee, U.S. Embassy, Colombo, Ceylon

Languages

Portuguese
Spanish

Professional Associations

American Foreign Service Association

Professional Interests

Narcotics/Drug Abuse Prevention
Public Awareness Campaigns
Media Relations
Seminars and Conferences
Issues Management
International Operations
Government Relations
Communications Strategies/Public Relations

Janice L. Sawyer

Education

School	Degree	Area of Concentration	Date
University of Maryland	B.A.	Criminology/Psychology	1972

Employment

Employer	Title	Dates
Macro Systems, Inc.	Training Implementation Coordinator/ Curriculum Development Co-Manager	1989-
NOVA Research Company	Training Task Manager/Curriculum Development Specialist	1988-1989
TRESP Associates, Inc.	Technical Writer/Trainer/Curriculum Development Specialist	1987-1988
URSA Institute/Polaris Research and Development	Curriculum Development Specialist/ Conference Manager/Trainer	1986-1987
Alcohol and Drug Abuse Services Administration (ADASA)	Alcoholism and Drug Abuse Treatment Counselor	1985-1986
Pinebrook Services for Children and Youth	Director, Diagnostic Services	1984-1985
Northampton County Prison	Alcoholism and Drug Abuse Program Coordinator	1980-1984
District of Columbia Superior Court	Probation Officer	1972-1979

Work Experience

Ms. Sawyer co-manages and implements training and curriculum development for the Office for Substance Abuse Prevention's National Training System (NTS). She recruits and supervises consultants who will deliver national, regional, and local training; and develops curriculum segments in various areas of substance abuse prevention, intervention, and treatment. The targeted audiences for the training sessions are 1) allied health professionals such as physicians, nurses, alcoholism and other drug abuse counselors, and social workers; and 2) community groups such as public school personnel, criminal justice service providers, clergy, and business groups. She also identifies and organizes NTS advisory review boards consisting of representatives from the various disciplines. These task forces will assess the training needs of each group's discipline and will review the training courses for accuracy and relevancy. In addition, Ms. Sawyer will lead task forces focusing on cultural sensitivities and people with disabilities. She also will manage logistics for training events.

Previously, Ms. Sawyer was employed by Nova Research Company where she designed, developed, managed, and delivered (throughout the United States, including Puerto Rico and Mexico) training packages for the National Institute on Drug Abuse (NIDA)-funded alcohol and other drug abuse and AIDS treatment, prevention, education, and intervention programs. Through these training sessions, she instructed research directors, supervisors, interviewers, data input personnel, and other staff members to administer two research interview schedules--an initial assessment (AIA) and a followup questionnaire (AFA). Ms. Sawyer also developed and wrote detailed AIA and AFA training manuals, which serve as reference guides for administering the questionnaires. She designed agendas, managed logistics, and trained full-time and consultant trainers to conduct these training sessions; she also assigned and managed their tasks. In addition,

she designed and developed a training manual for, and delivered Training of Trainers, a 6-day workshop, instructing research directors and program supervisors to deliver training and consultation on the AIAs and AFAs. Ms. Sawyer assisted in developing a model treatment program and training curriculum for NIDA's Reaching the Female Sexual Partners of Intravenous Drug Users (IVDUs) project.

For TRESP Associates, Ms. Sawyer developed, wrote, and delivered a training curriculum for the National Institute on Drug Abuse (NIDA) project entitled, AIDS Prevention Among Ethnic Minorities. A qualitative analysis of findings, published in Spring 1988, served as a foundation for this training package. This 5-day training program was designed to teach intervention and treatment strategies to alcoholism and drug abuse counselors who service African American IVDUs. She conducted ethnographic research through focus groups for the National Institute on Mental Health (NIMH) to gather and analyze data on AIDS-related attitudes, beliefs, and knowledge among several racial/ethnic groups including Spanish-speaking and Haitian individuals. Ms. Sawyer delivered training throughout the United States to chemical dependency treatment program administrators, counselors, and trainers; and developed and delivered a Training of Trainers package to National AIDS Educators/Trainers.

While employed by URSA Institute and Polaris Research and Development, Ms. Sawyer participated in the development and delivery of NIDA training programs on AIDS and the Intravenous Drug User for chemical dependency treatment staff. She also delivered Training of Trainers workshops nationally on these packages and provided technical assistance to State governments on how to deliver these training programs. In addition, she developed the format and content of National Institute of Justice judicial conferences; coordinated and managed conference planning and delivery; marketed the firm's services; and appeared at community and media events.

For the Alcohol and Drug Abuse Services Administration (ADASA), Ms. Sawyer prepared comprehensive treatment plans for clients/patients, provided alcoholism and other drug abuse education and counseling, and monitored patient compliance with program protocol.

As director of diagnostic services for the Pinebrook Services for Children and Youth, Ms. Sawyer directed and implemented prevention and diagnostic services for dependent and delinquent youth; hired and supervised consultants who provided evaluation and treatment; and assisted in marketing the firm's services.

For the Northampton County Prison, Easton, Pennsylvania, Ms. Sawyer designed and implemented drug and alcohol education and counseling services for inmates; recruited and supervised service providers and student interns; and developed and implemented the prison's treatment program for Driving Under the Influence (DUI) offenders to conform with new State law. She also trained employees at several Pennsylvania prisons (correctional officers, treatment counselors, medical, and administrative staff) on pharmacology of drugs and alcohol, methods of determining when an inmate might be under the influence of an intoxicating substance, and cross-culture/cross-gender communication skills. In addition, she conducted community drug and alcohol education seminars and taught Alcohol Highway Safety classes for the Pennsylvania Department of Transportation (required education for persons convicted of DUI).

As a probation officer with the District of Columbia Superior Court, Ms. Sawyer supervised probation officers, student interns, and volunteers; prepared presentence reports on convicted adults; and counseled probationers and monitored their compliance with court directives. She also developed and managed the Superior Court Social Services volunteer program, researched and wrote a Standard Operating Procedures Manual, and designed and implemented drug and alcohol training and education programs for probation officers and administrative staff.

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- Staff development
 - People of color and women's issues
 - Training of Trainers Workshops

Carolyn A. Rutsch

Education

School	Degree	Area of Concentration	Date
University of Texas, LBJ School of Public Affairs	M.P.A.	Public Affairs	1988
Princeton University	B.A.	History/Latin American Studies	1983

Employment

Employer	Title	Dates
Macro Systems, Inc.	Consultant	1990-
National Commission to Prevent Infant Mortality	Policy Analyst	1988-1990
Texas Cancer Network Project	Project Officer	1987-1988
National Center for Policy Alternatives	Graduate Intern	1987
Brookings Institution	Research Analyst	1983-1986

Work Experience

Ms. Rutsch recently joined Macro Systems as a consultant with the Health and Human Services division. She has a strong background in maternal and child health and more than 8 years of policy analysis experience in the fields of child welfare and health and human services. Her responsibilities have included planning, management, and analysis for projects to improve access to health and human services for low-income women and young children.

Ms. Rutsch's recent Macro assignments include:

- **Study of Homeless Families with Children: Programmatic Responses of Five Communities**—For HHS/ASPE, this study examined the problem and promising approaches to homelessness among families with children. In particular, it (1) described the specialized needs of homeless families and the size and scope of the problem, (2) examined innovative programs in five cities, (3) gauged the comprehensiveness of service linkages, and (4) identified areas for future research and service delivery replication. As a key member of the project team, Ms. Rutsch conducted interviews with experts, identified model programs, conducted city case studies, and wrote the final report.
- **Study of Community Programs Serving Drug-Exposed Children**—The purpose of this HHS/ASPE study was to (1) identify model programs designed to meet the needs of drug-exposed infants and young children, (2) examine the policy, program, and system responses to the problem, and (3) assess the impact of drug-exposed children on components of the child welfare system such as foster care, child abuse and neglect, and health care and child development services. Site visits were conducted in four major U.S. cities and involved

both extensive interviews with over 125 providers, on-site observations of programs, and an assessment of the social services delivery system. As a key member of the project team, Ms. Rutsch developed descriptions of the programs and systems in which the programs operate, coordinated and conducted site visits, and wrote the final report.

- **Evaluation of OSAP High-Risk Youth Demonstration**—For HHS/OSAP, Ms. Rutsch is coauthoring a series of monographs and publications on the implementation of 130 demonstration programs working with youth at high risk of substance abuse. This effort is part of a 3-year evaluation for the Office for Substance Abuse Prevention.
- **Community Partnership Training Program**—For HHS/OSAP, this 4-year program assists community grantees in their efforts to reduce alcohol and other drug abuse by providing training to encourage community building, promote strategic planning skills building, improve community prevention strategies, and support individual team building. Ms. Rutsch serves as evaluation manager for the project, with responsibility for evaluating the effectiveness of over 400 training events on the development of the community partnerships.
- **Evaluation of FNS Child Nutrition Demonstrations**—For the USDA's Food and Nutrition Service, this study evaluates the effectiveness of strategies to expand the Child and Adult Care Food Program (CACFP) to low-income children in child care centers, family day care homes, and shelters serving homeless families. Ms. Rutsch designed the survey instrument for family day care home sponsors, homes, and parents. She has primary responsibility for conducting the evaluation interviews, analyzing the data collected in the demonstration sites, and will assist in writing the final report.

Prior to joining Macro, Ms. Rutsch served as a policy analyst for the National Commission to Prevent Infant Mortality, which was created by Congress in 1987 to address the high rate of infant mortality and morbidity in the United States. While at the Commission, Ms. Rutsch analyzed trends in maternal and infant health and authored *Troubling Trends: The Health of America's Next Generation* (1990). The report examined the effect of several trends in the 1980s, such as the increase in maternal drug use on infant morbidity and mortality. She also served as the Commission liaison on the issue of maternal drug dependency and drug-exposed infants, working with Congressional Committee staff, advocacy groups, and the media. In addition, she co-chaired the Healthy Mothers, Healthy Babies Subcommittee on Substance Abuse and Pregnancy. Ms. Rutsch served as the project manager for the Commission's "One-Stop Shopping" initiative for coordinating health and human services for pregnant women, including drug treatment. She has particular expertise in maternal and child health financing and delivery systems. With the Brookings Institution, she organized a symposium to explore policy options for providing universal access to health care for pregnant women and young children.

As a graduate intern with the National Center for Policy Alternatives, Ms. Rutsch organized the Women's Economic Justice Center, identifying innovative State programs in income support, welfare reform, and child care. Her graduate thesis, *State Child Care Policy: Putting the Pieces Together* (1988) identified three States with innovative mechanisms for coordinating Head Start, Title XX child care, and prekindergarten for young children. Ms. Rutsch served on the United Way of Texas Child Care Working Group and participated on a State task force to coordinate child care services for low-income children in Texas. In addition, Ms. Rutsch has experience in child care service delivery. While conducting her studies of Texas child care, she operated an afternoon drop-in center for infants and young children.

In addition to her experience in maternal and child health and low-income child care, Ms. Rutsch has conducted general health and human services policy analysis. As a project officer for the State-funded Texas Cancer Network project, Ms. Rutsch led a community cancer education project and evaluated its effectiveness for the Texas Department of Health. Over a 3-year period at the Brookings Institution, Ms. Rutsch conducted policy analysis on a variety of topics including preventive health care, the Federal budget deficit, and gender issues in the workplace.

Carolyn A. Rutsch

Publications and Reports

Homeless families with children: Programmatic responses of five communities. Vols. I and II. 1991.

Implementation issues and viable strategies: Lessons learned from the high-risk youth grantees. In progress.

Programs serving drug-exposed children and their families. Vols. I and II. 1991.

Rutsch, C.A. 1990. *Troubling trends: The health of America's next generation.* Prepared by the National Commission to Prevent Infant Mortality.

———. 1989. National policy perspectives: Preventing infant mortality. *Academic Medicine* 64 (June).

———. 1988. State child care policy: Putting the pieces together. Master's thesis, University of Texas.

Presentations

Rutsch, C.A., C. Morgan, A. Ahart, and M. Kotler. 1991. *Programs serving drug-exposed children and their families.* Executive briefing for the Assistant Secretary for Planning and Evaluation, U.S. Department of Health and Human Services, March, Washington, D.C.

Rutsch, C.A., T. Chapel, L. Baughman, and M. Kotler. 1991. *Homeless families with children: Programmatic responses of five communities.* Executive briefing for the Assistant Secretary for Planning and Evaluation, U.S. Department of Health and Human Services, May, Washington, D.C.

SueLynn

Education

School	Degree	Area of Concentration	Date
University of Arizona	M.Ed.	Special Education	1965
Ohio University	B.A.	Speech Pathology	1963

Employment

Employer	Title	Dates
Institute for Resource Development, Inc.	Technical Director	1989-
Government/Private Sectors	Management Consultant	1987-1989
Isabel Briggs Myers Memorial Fund	Executive Director	1987-1989
Johns Hopkins Hospital	Director/Organization Development and Training	1987-1989
Johns Hopkins University	Instructor	1978-1986

Work Experience

In a career spanning 23 years, SueLynn has provided expertise to business, academic, government, and medical organizations. Services have included organizational consulting, management/staff training and development, administration and supervision, and program coordination and development. She has a solid background in Applied Behavioral Science theory and strategies which can be applied to a wide variety of situations.

As technical director for IRD, SueLynn is responsible for providing a complete spectrum of human resource organizational and training services to national and international clientele in a wide variety of government and private business settings. Prior to joining IRD, she designed and presented human resource development training programs and provided organizational and management consulting to private business, industrial and Federal Government clientele. Her client list included the Naval Surface Warfare Center, Group Health Associates, University of Maryland, Cleveland Hospitals, NASA Headquarters and NASA Lewis Research Center, Office of Civilian Personnel Management, Communication Companies International, Alcoa Jamaica, and Oxford University (England).

Previously, SueLynn served as executive director for the Isabel Myers Memorial Fund, where she was responsible for identification and solicitation of funds to develop research grants using the Myers-Briggs Type Indicator. As director for Organization Development and Training, The Johns Hopkins Hospital, she was responsible for overall administrative functions. Her department provided management and skill building training and human resource consulting services for 5,500 employees. While instructor at Johns Hopkins University, SueLynn planned and presented graduate level courses, designed to provide an overview of the field of Applied Behavioral Science to adult professionals.

Professional Associations

Past President, International Association for Psychological Type
Board Member, Center for Applications for Psychological Type, 1986-1989
Faculty, APT, MBTI Training Program, 1986-1989

CLASS III

Ariel C. Ahart

Education

School	Degree	Area of Concentration	Date
Duke University, Institute of Policy Sciences and Public Affairs	M.A.	Public Policy	1988
Marietta College	B.A.	Management/Economics	1986

Employment

Employer	Title	Dates
Macro Systems, Inc.	Consultant	1990-
U.S. Department of Agriculture, Food and Nutrition Service	Presidential Management Intern	1988-1990
Peace Corps, Washington, D.C.	Presidential Management Intern	1989
United Way International	Graduate Intern	1987

Work Experience

Ms. Ahart, a Macro consultant, has a strong background in policy analysis and evaluation and has worked on a number of health-related projects targeted to high risk populations. In addition to her professional experience, Ms. Ahart's volunteer work teaching English-as-a-second-language at the Spanish Education Development Center has provided her with an understanding of cross-cultural communication and training issues.

Ms. Ahart is involved in an assessment of HIV/AIDS counseling, testing, referral, and partner notification services under contract to the Centers for Disease Control. The study consists of visits to 50 sites in seven U.S. cities. Through on-site observation and interviews, Ms. Ahart will ascertain the kinds and intensity of AIDS services provided in different health care settings such as family planning, prenatal care, sexually transmitted disease and tuberculosis clinics, and drug treatment centers.

Under contract to the Office for Treatment Improvement, Ms. Ahart is currently helping design the evaluation for a large-scale addiction counselor training project. The project will provide as many as 700 courses to entry-level addiction counselors across the nation over a one year period. The evaluation will have both a process and outcome component. Ms. Ahart is involved in the design of the evaluation plan and instrumentation. She will also conduct on-site assessments of training sessions.

Ms. Ahart recently completed a study funded by the Department of Health and Human Services to examine community health, education, developmental, and child welfare services for drug-exposed children and their families. The study included on-site and phone interviews with over 125 professionals in four major cities. As a member of the study team, Ms. Ahart visited hospitals, drug treatment programs, preschools, family courts, child welfare agencies, foster care homes, and public health clinics and prepared a cross-site analysis of program and policy findings.

Under a separate contract for the Department of Health and Human Services, Macro is conducting assessments of program evaluation plans submitted by community action agency grantees. These grantees have been awarded Federal funding to develop self sufficiency initiatives aimed at low-income/high-risk populations. Ms. Ahart provides technical assistance in evaluation to the grantees and helps facilitate evaluation workshops.

Ms. Ahart is also assisting with the evaluation of a demonstration project funded by the Department of Agriculture's Food and Nutrition Service. The demonstration is intended to increase participation in subsidized meal programs by low income infants and toddlers in three types of day care settings, including family homes, center-based, and homeless shelters. Ms. Ahart is responsible for developing and pretesting survey instruments and administering a mail survey questionnaire.

Ms. Ahart assisted with the evaluation of demonstration projects for youth at high-risk for substance abuse for the Office for Substance Abuse Prevention. This project included both process and outcome evaluations of 130 innovative prevention and treatment models for high risk youth and their families. Ms. Ahart was responsible for reviewing program reports and assessing program evaluations.

Under contract to the U.S. State Department, Bureau of International Narcotics Matters, Macro staff provided training and technical assistance in drug abuse prevention, education, treatment, and epidemiology to narcotics control officials in developing countries. Ms. Ahart was in charge of collecting and disseminating narcotics-related information as requested by U.S. Embassies and indigenous substance abuse prevention organizations.

Before coming to Macro, Ms. Ahart worked as a presidential management intern for the U.S. Department of Agriculture, Food and Nutrition Service. Ms. Ahart conducted program and policy analysis on domestic food assistance programs, and prepared budget estimates and legislative summaries (including work on the Hunger Prevention Act of 1988 and the 1990 Farm Bill). In addition to her knowledge of the 13 food assistance programs administered by the Food and Nutrition Service, Ms. Ahart is familiar with the complex and often fragmented network of social service programs available to low-income families. In conjunction with the 1990 Farm Bill (which reauthorizes the Food Stamp Program), she conducted an analysis of proposed legislation that would increase coordination between Aid to Families with Dependent Children and the Food Stamp Program and require cooperation with child support enforcement agencies as a condition of Food Stamp eligibility. Her analysis included an examination of the interactive effect of proposed changes in eligibility rules, application requirements, projected cost impacts, and changes in participation. Ms. Ahart was the task officer on a contract to prepare a reference handbook that described 32 assistance programs, the populations they serve, and the interaction of these programs with the Food Stamp Program.

Ms. Ahart worked on the White House Task Force on Infant Mortality where she wrote the report from the Subcommittee on Delivery of Community Based Services. The report examined the range of health and human services available to women and infants in high risk populations; identified barriers to these services; described outstanding examples of public/private sector cooperative efforts to address infant mortality; and provided the Task Force with recommendations on how to improve access to and delivery of health and human services to the target groups. As part of the study, Ms. Ahart conducted an informal survey of Federal agencies and nonprofit service, professional, and research organizations to identify key issues and innovative approaches to service delivery (including one-stop shopping) and outreach efforts.

Ms. Ahart was detailed from the Food and Nutrition Service to the Africa Region, Peace Corps, Washington, D.C. where she assisted with the annual country program and budget reviews. The Africa region was in the process of developing a systematic approach to program evaluation that incorporated both quantitative and qualitative measures of analysis. Under a separate assignment, Ms. Ahart researched and prepared an options paper exploring the potential for integrating U.S.A.I.D. Food for Peace resources with the Peace Corps Africa Food Systems Initiative. Her

research included both a literature review and telephone and personal interviews with experts in the field. In addition, Ms. Ahart was involved in an effort to establish a small enterprise development program in the Africa Region.

As a graduate intern at United Way International, Ms. Ahart conducted a feasibility study for an international Gifts-In-Kind program and surveyed nonprofit organizations involved in disaster relief and development assistance in developing countries. The study, which eventually served as Ms. Ahart's graduate thesis, consisted of a literature review and telephone and personal interviews, and dealt with issues such as interorganizational cooperation, financing mechanisms, and targeting services to designated populations.

Lisa Hammer

Education

School	Degree	Area of Concentration	Date
University of Maryland	Graduate Studies	Science Education	1980
University of Maryland	B.S.	Elementary Education	1978

Employment

Employer	Title	Dates
Macro International Inc.	Senior Manager	1991-
Aspen Systems Corp.	Manager CATI/Conferencing	1986-1991
Retail Supermarket	Point of Sale Manager	1980-1985
Prince Georges County	Science Teacher	1978-1981

Work Experience

Ms. Hammer recently joined Macro as a senior manager. She is currently serving as survey director on the Department of Housing and Urban Development's (HUD) Quality Control Study, which is an effort to provide HUD with an efficient and accurate means of measuring the extent, severity, and cost of errors associated with the income certification and rent calculation process of low-income families applying for housing assistance. Ms. Hammer will be responsible for all phases of field data collection of over 6,000 interviews.

She was previously a manager with the Applied Management Sciences Division (AMSD) of Aspen Systems Corporation's CATI/Conferencing Group. She was project director for a task-order contract with the Department of Education's National Assessment Governing Board (NAGB) to provide support for the Board's convening activities. NAGB is entrusted with formulating policy guidelines for National Assessment in Educational Progress (NAEP). Because of the high position of visibility that NAGB has in policy formulation, Ms. Hammer was required to support the Board's convening activities with prompt, yet detail-oriented skills. She was regularly required to meet short time frames during the performance of these tasks. Duties included preparation of project cost estimates and budgets, interaction with NAGB executive director and board members, directing project staff, attending NAGB board meetings, tracking project progress and expenditures, and supervising preparation of conference and meeting support materials.

Ms. Hammer was also responsible for managing all telephone surveys conducted in the AMSD computer assisted data collection center. Her responsibilities included designing the questionnaire and then programming the survey instrument for use on the CATI system. In addition, her duties included recruiting, hiring, training, and continuous supervision of telephone interviewers. She monitored data collection, the system's administration, and performed data quality audits and tests of sample frame integrity. At the conclusion of a survey period, Ms. Hammer was responsible for converting all data into an ASCII file, and providing documentation of the layout of the converted file for use in the final analysis. Her duties also included editing the database using the PC-SAS system and performing frequency and accountability checks.

Her project experience has included the following:

- **Manager of the Weatherization Assistance Program (WAP), Washington, DC.** Ms. Hammer managed the Department of Energy's conference, which involved 175 participants, and was intended to provide an opportunity for the exchange of information between DOE, the States, and selected local agencies relevant to the implementation of the WAP. She was responsible for all phases of the planning, execution, and followup of the conference, including negotiations and planning with the hotel, development of registration and conference materials, as well as on-site support during the conference. She also had financial responsibilities that included handling registration fees, securing all necessary purchases, and overall management of the budget.
- **Data collection manager for a survey of Private and Public Pension Plans' Investments in Mortgage-backed Securities for HUD's Office of Policy Development and Research.** Ms. Hammer managed a project to develop a nationally representative sample of pension plans which inquired about the amount and proportion of investments in mortgage-backed securities. Mail surveys were conducted on both a monthly and quarterly basis, and followed up with a telephone (CATI) survey to nonrespondents.
- **Manager for Two CATI Surveys For the New England Power Service Company.** Ms. Hammer conducted two CATI surveys to gauge the satisfaction of customers with the Massachusetts Electric Company's Energy Fitness Program. The program, which serves all residents in the Worcester, MA area, focused on low income residents, and was carried out through close cooperation of neighborhood organizations in association with Massachusetts Electric subcontractors. The 550 interviews were conducted with participants to obtain their evaluation of the program and its effectiveness, their awareness of energy conservation, and their opinions of the electric utility company as well as households who did not participate to determine the extent to which customers undertake similar conservation measures on their own. Ms. Hammer was responsible for all phases of data collection, including questionnaire design.
- **Deputy Project Director for the National Ethnoviolence Survey.** For the National Institute Against Prejudice and Violence (NIAPV), Ms. Hammer conducted the first national survey of its kind. The Institute studies the causes, effects, and possible remedies to violence motivated by racial, religious, and ethnic prejudice. Ms. Hammer worked closely with the client developing the survey instrument, programmed it for use on the CATI system, and monitored all data collection.
- **Manager of a Survey of Electric Customers for the Tennessee Valley Authority.** She conducted a three-phased data collection project with TVA's commercial and industrial customers. The survey was intended to collect detailed data from TVA's electric customers throughout the seven-state TVA region. The first phase involved a mail survey to 4,000 customers. Ms. Hammer developed a receipt control system on CATI for returned questionnaires, programmed the questionnaire for conducting the second phase, which involved interviewing on the CATI system, and trained the field interviewers in the TVA region for the third phase to conduct on-site surveys of nonrespondents.
- **Manager of Data Collection for Con Edison's Load Management Market Study.** The purpose of the study was to assess customer preferences for different types of load management programs and features. The data were collected through a complex interviewing process known as a Telephone-Mail-Telephone (TMT) survey. Ms. Hammer participated in the design of the survey instrument and programmed it on the CATI system upon finalization. She also performed database management and was responsible for managing all three phases of the TMT survey.

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- **Survey Manager of Data Collection for the Evaluation of the Rhode Island Lighting Program.** For the New England Power Service Company (NEPSCo), Ms. Hammer conducted a followup to other surveys conducted for NEPSCo under her supervision. This survey provided the client with an evaluation of the Commercial and Industrial lighting installation program. Ms. Hammer programmed the survey instrument for use on CATI and managed all phases of data collection.
 - **Designer of the Survey Instrument for Commercial Market Segmentation Study.** For this study, interviews were conducted with 2,000 customers of the Wisconsin Utilities Association (WUA) in an effort to examine to what extent the commercial customer markets served by the Wisconsin Utilities are unique from one another as well as the degree of similarity among these markets. This survey was unique because the WUA customers are divided over 1,200 distinct strata. In addition to design of the questionnaire, Ms. Hammer was responsible for very close monitoring of the database to ensure that the 2,000 completed interviews were allocated over the 1,200 strata. She was also responsible for all other supervisory functions of data collection on the CATI System.
 - **Supervisor of Two Sets of Surveys for the New England Power Service Company.** The first set was a follow-up survey to support an evaluation of the Lighting Dealer Rebate Program. The second set of surveys conducted for NEPSCo was an effort to perform an evaluation of two large customer conservation and load management programs, the C/I Performance Contracting Program and the Customized C&LM Program. Ms. Hammer was responsible for working with the client in the design of the questionnaires for both sets of surveys. She then programmed the five questionnaires for use on the CATI system and managed all aspects of the data collection including: training interviewers, monitoring the database, performing quality control checks, and supervising interviewers. At the conclusion of the data collection, Ms. Hammer converted each completed interview into an ASCII file and prepared documentation of the layout of the file and status of each sample record for delivery to the client.
 - **Supervisor of Commercial Market Profile Surveys of Current and Potential Gas End Users.** For the Columbia Gas Distribution Companies (CDC), telephone interviews (CATI) were conducted with 2,100 current CDC customers and non-customers. Ms. Hammer assisted in the design of both questionnaires with sample allocation over 75 subpopulations. She was responsible for all aspects of data collection and interviewer supervision.
 - **Designer of Survey Instrument for Gas and Electric Customers of Central Hudson Gas and Electric Corporation.** Ms. Hammer worked closely with the project director in the preparation of the questionnaire to be used for interviewing commercial customers of CHG&E's audit program. She was responsible for programming the questionnaire for use on CATI, as well as continual monitoring of the database and close supervision of telephone interviewers.
 - **Designer of Control Systems for Mail Questionnaires.** For the Long Island Lighting Company (LILCO) and the Philadelphia Electric Company (PECO), Ms. Hammer designed a system for tracking 6,000 to 15,000 questionnaires respectively, using the CATI system.
 - **Supervisor of a Customer Survey on Time-of-Use.** For the Long Island Lighting Company (LILCO), Ms. Hammer assisted in finalizing the questionnaire and then programmed the survey instrument for use on the CATI system. The sample frame was stratified by five geographic zones and four kWh size classes. Ms. Hammer was responsible for continual monitoring of the database to ensure that the 200 completed interviews were allocated over the 20 strata in proportion to the target population of 681 units.

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- **Supervisor of Surveys on Lighting Rebate Program Dealers and Customers.** For the New England Power Service Company (NEPSCO), she worked closely with the client in the preparation of the samples and finalizing of the questionnaires. The client was provided with timely updates and reports of progress throughout the data collection process. Ms. Hammer edited the database, assisted in performing frequency checks of data collection results, and prepared final data files and documentation reports for delivery to the client.
 - **Monitor of Performance of Telephone Interviewers for the National Science Foundation.** On behalf of the NSF's 1987 Science and Engineering Labor Market Survey, she conducted a followup of nonrespondents to a mail survey. The survey was conducted in an effort to assist NSF in discovering trends in science education and employment. Ms. Hammer was instrumental in adapting a mail survey to use by telephone interviewers.
 - **Supervisor of a Data Collection Task** to forecast the amount of electrical energy needed in the Philadelphia Electric Company (PECO) service territory. Ms. Hammer trained telephone interviewers on the use of Standard Industrial Classification (SIC) codes. Fifteen hundred commercial customers were contacted in an effort to determine the SIC code of their industry and also to determine whether they would be willing to participate in an on-site survey. Ms. Hammer was responsible for entering all data into a PC-SAS system and performing frequency and accountability tabulations.
 - **Supervisor of Commercial Customer Attitude Survey.** For Southern California Edison, Ms. Hammer managed a survey, conducted with 1,800 energy managers, using the CATI system. Ms. Hammer was responsible for monitoring data collection and performing data quality audits. Her duties also included frequent reviews of the database to determine sample availability and conversion of data into a file for final analysis.
 - **Supervisor of Data Collection for a Residential Energy Usage Survey.** For the Atlantic Electric Company, Ms. Hammer participated in a follow-up of nonrespondents to a mail survey. She was responsible for supervising and monitoring the interviewers using the CATI System.
 - **Analyst and Supervisor for a Major National Survey of the Child Care Food Program (CCFP).** For the Food and Nutritional Service of the U.S. Department of Agriculture, Ms. Hammer conducted site visits to day care facilities in four states, completed interviews, coordinated data collection schedules, maintained the survey control database using Rbase:5000, reviewed data, and supplied frame information for quality and completeness. She was responsible for database editing of 2,000 interviewers using PC-SAS system. She performed frequency and accountability checks for over 300 fields of data for each interview.
 - **Researcher and Analyst for the Child Care Food Program Targeting Study.** For the Food and Nutrition Service of the U.S. Department of Agriculture (FNS/USDA), Ms. Hammer assisted in determining how FNS might best target child care food benefits to the low income population. She worked with the project director in the recommendation of Advisory Panel candidates to advise FNS on study activities and products. She was also a key member of the Literature Review task reviewing literature relative to the issues of supply and demand and prepared detailed abstracts of each data source, along with an annotated bibliography. After review by FNS, Ms. Hammer was involved in the development of plans to analyze secondary databases.
 - **Workshop Coordinator for the Conference on Basic Research in Industry.** The workshop was co-hosted by the National Science Foundation (NSF) and the Executive Office of the President. Ms. Hammer was responsible for selecting a suitable site for the 2-day conference. She prepared invitations and secured travel arrangements for all attendees. During the conference, Ms. Hammer worked on-site with the hotel staff to ensure that all needs of the attendees were met and the conference was conducted in a timely and efficient manner.

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- **Coordinator of a Workshop for State Legislators on AIDS Research.** Under a contract with the Office of the National Center for Health Services Research and Health Care Technology Assessment (NCHSR/HCTA) User Liaison Program, Ms. Hammer was responsible for all logistical activities at the requisite predissemination meetings, and on-site during the workshop. She also reviewed and oversaw preparation of presenter materials, arranged travel for all presenters and participants, and processed all reimbursable attendee claims and presenter fees. Ms. Hammer was also responsible for writing a summary report for NCHSR based on evaluation forms completed by workshop attendees.
 - **Coordinator of an Organ Transplant Workshop.** For the National Center for Health Service Research and Health Care Technology Assessment, Ms. Hammer was responsible for procuring text and slides and overseeing reproduction of materials for use during the workshop. Other responsibilities included securing all travel and logistical arrangements for the attendees and participants.
 - **Point of Sale Manager for Retail Supermarket in Virginia.** Ms. Hammer assisted in planning and coordinating the newly established retail supermarket with gross yearly sales of \$20 million. She was responsible for hiring and managing a staff in excess of 40 employees and training, scheduling, and supervising all personnel involved in point of sale.
 - **Sixth Grade Science Teacher in Prince George's County, Maryland.** She was instrumental in departmentalizing upper-level students in an effort to enhance the science curriculum, established a science club, and pioneered a course on growth and human development for upper level students. Ms. Hammer served as faculty advisory chairperson representing staff at meetings with the Board of Education, and faculty representative at meetings with the Prince George's County Educators Association.

Computer Systems and Software

Systems: IBM PC XT/AT and Compatible, Novell Advanced Netware 286, Apple Macintosh, Wang VS Minicomputers

Software: Computer Assisted Telephone Interviewing (CATT), Ci2, WordPerfect 5.1, PC and MS DOS, Lotus 1-2-3, Microsoft Windows, Microsoft Excel, SAMNA, SMARTCOM, PC-SAS, WYLBUR, LEWP, RBase:5000

Professional Affiliations

American Association for Public Opinion Research
Society of Government Meeting Planners

Honors

Certificate of Appreciation, United States Department of Energy, November 1990.

Robert Pels

Education

School	Degree	Area of Concentration	Date
University of Vermont	B.S.	Computer Science	1986

Employment

Employer	Title	Dates
Macro Systems, Inc.	Programmer/Analyst	1987-
University of Vermont	Programmer	1985-1986
Vermont Department of Health	Programmer	1984
Analogic, Inc.	Programmer	1983

Work Experience

Mr. Pels currently serves as the lead computer analyst and programmer for an OSEP-sponsored Compensatory Technology grant to develop a voice-operated computer drawing program. He also serves as a Design Team member on two interactive videodisc projects.

Mr. Pels worked on two recently completed OSEP-funded projects. He was the lead programmer on a project to develop science simulation software targeted for learning disabled students. This software, which runs on the Apple II-GS and on IBM PC-compatible computers, was published by Focus Media under the title "Physical Science Laboratory." He also developed a direct, user-friendly recordkeeping system for both the assessment and instructional programs in the project, "Using Interactive Videodisc in Evaluating and Training Job-Related Math Skills."

Mr. Pels has also developed software for severely handicapped young adults in a project for the Department of Health and Human Services. The focus of this project is to use software in a home-based education program to promote the retention of independent living skills in these individuals once they have aged out of the public education system. This software, which was developed for IBM PC compatible microcomputers, uses elaborate graphics, animation, and high quality voice appropriate for the target audience.

In his first assignment with Macro, Mr. Pels worked on the software then being developed for an OSEP-sponsored grant that focused on using simulation technology to promote the social competence of handicapped students. It was his work that led to a significantly improved voice quality in this software, which was recently published by the American Guidance Service as part of a total package consisting of software, videotape, and print materials.

Prior to joining Macro, Mr. Pels worked as a member of a two-person team developing software and coordinating hardware for the purpose of digitizing, tracing, and cataloging video images of microscopic tissue for neuroanatomical research. He was personally responsible for the design and coding of a mouse-operated, graphics-oriented menu system. The system was programmed in C with the Halo graphics library on an IBM PC-XT.

Mr. Pels is experienced in the use of financial and statistical application software, has designed and maintained databases, and has written programs to facilitate data entry and generate reports. He has programmed in SAS and in the 1022 database language alone and in combination with FORTRAN 77.

He also worked as a member of a three-person team developing an operating system for a dedicated 68000-based processor. He was personally responsible for the design and coding of the command shell. The project was done in Pascal and 68000 Assembly language.

Publications

Harris, C.D.; E.P. Robey; K. Wholey; & R. Pels. 1989. *Final report: An interactive videodisc program to evaluate and train job-related math skills for transition*. Macro Final Report, Silver Spring, MD: Macro Systems, Inc.

Products

Talk and Draw
Social Skills on the Job
Working with Math
Lessons for Living
Physical Science Laboratory

Computer Experience

Programming Languages: PASCAL, C, Prolog, LISP, FORTRAN, SAS, TenCORE, BASIC, Assembly Language

Operating Systems/Programming Environments: Unix, VAX-VMS, MS-DOS, MPW (Macintosh), APW (Apple IIGS)

Elaine P. Robey

Education

School	Degree	Area of Concentration	Date
University of Maryland	M.A.	Instructional Technology	1990
University of Maryland	Teaching Certification	Mathematics	1982-1986
Middlebury College	B.A.	Art History	1969

Employment

Employer	Title	Dates
Macro Systems, Inc.	Consultant	1987-
Center for Academic Achievement	Mathematics Tutor	1984-1986
The Hecht Company	Personnel Manager	1974-1975
The Hecht Company	Personnel Services Manager	1970-1974

Work Experience

For the past 3 years, Ms. Robey has served as research specialist on the OSEP-funded research and model development project, "Evaluation of the Integration of Technology for Instructing Handicapped Students (High School Level)." This effort focuses on the effective integration of technology into the curriculum of high school level mainstreamed special education students. The ultimate goal of the project is the development of a model of effective practices for integrating technology into the curriculum to be disseminated nationally. Ms. Robey has served on this project since its inception. She was responsible for collecting all required data from four of the nine sites during the research phase of the project and continues to work with and collect data in the largest district during the model evaluation phase. She has collected the data required for this project through the use of both semistructured and structured interviews with key staff, the administration of surveys, classroom observation, and review of existing documents. She has participated actively in the subsequent analysis of this data throughout the project. In addition she has: conducted a review of the literature and worked to develop a taxonomy based on this review; developed a curriculum content taxonomy for high school level mainstreamed students; and participated actively in the development of the model with a particular focus on the issues surrounding the acquisition and utilization of material resources.

Ms. Robey is also a member of the research team on an OSEP grant to study special education administrative involvement in computer implementation. The second phase of this project makes use of case study methodology to closely examine three school districts sampled in Phase 1. The purpose of these studies is to identify effective practices and processes for technology implementation. Ms. Robey was involved in the design of the case studies, was responsible for the development of case study interview protocols used during Phase II, and participated in data collection activities in all districts studied. The study's findings and information from both phases will be incorporated in a *Guidebook for Special Education Administrators*, which will include concrete examples of the practices found to be effective.

Ms. Robey served as lead instructional designer on an ED/OSEP grant, "Using Interactive Videodisc in Evaluating and Training Job-Related Math Skills." This project resulted in two interactive videodiscs, a single-sided assessment disc and a double-sided instructional disc. The assessment videodisc provides direct student access

to a series of vocational simulations in which specific assessment probes are used to determine the existing job-related math skill level in nine identified skill areas. The instructional disc is focused to remediate skill deficits identified in the assessment. Both discs contain a recordkeeping system capable of providing the instructor with a detailed report of each student's status. During the analysis phase, Ms. Robey was responsible for conducting the content analysis and subsequent review of specified skills. She developed instructional designs, story boards, and scripts, and provided technical assistance to the production company. Ms. Robey also acted as lead programmer on the project. Finally, she was also responsible for the development of the complete user documentation which accompanies this videodisc package and for the site use evaluation materials.

Ms. Robey also served as design team leader on a recently completed NIDRR-funded project, "Investigation of Interactive Technologies for a Risky Behaviors Program for Mildly Mentally Handicapped Youth," in which literature and product reviews were used by a staff and consultant design team to prepare a preliminary design document for the development of an interactive videodisc product. She also served as a design team member on the OSEP-funded project, "Investigation of Interactive Technologies for Early Math and Science Concepts for Preschool Children," in which literature and product reviews in conjunction with expert input were used by staff and a consultant design team to prepare a detailed preliminary design document for the development of an interactive videodisc product.

Prior to joining Macro, while attending graduate school at the University of Maryland, Ms. Robey provided tutorial assistance to handicapped high school students in mathematics at the Center for Academic Achievement. This experience focused her interest on the potential of technology for remediating the academic and life-skill weaknesses that commonly occur in individuals with cognitive handicaps.

Ms. Robey was in personnel management at the Hecht Company, a Washington/Baltimore retail department store, for 5 years. As personnel manager of a branch store, she was responsible for supervising all personnel functions within the store, including: hiring and staffing; payroll and budget; basic training of new staff and developmental training for established staff; review and promotion; and personnel relations. She was also responsible for following up all staff experiencing performance problems, and making recommendations for further training and peer support.

As personnel services manager, she was responsible for the coordination of a number of personnel functions across all locations. Included among these programs were several government-sponsored programs that provided incentives to employers to hire disadvantaged workers with low skill levels. She was responsible for monitoring the progress of these individuals and making recommendations for further training and future placement. In addition, Ms. Robey was responsible for planning and coordinating special events, including all events related to recognition of outstanding employee achievement. She was also the editor of the house organ, a monthly publication with a circulation of 5,000.

Publications

Harris, C.D., E.P. Robey, K. Wholey, and R. Pels. 1989. *Final report: An interactive videodisc program to evaluate and train job-related math skills for transition.* Silver Spring, MD: Macro Systems, Inc.

Harris, C.D., E.P. Robey, and K. Wholey. 1989. Assessing and training job-related math skills via an interactive videodisc program. *Closing the Gap* 7(6):14.

Robey, E.P., A. Thomas, and C.D. Harris. 1990. *Final report: Studies of special education administrative involvement in computer implementation.* Silver Spring, MD: Macro Systems, Inc.

Robey, E.P., K. Wholey, and C.D. Harris. 1990. *Final report - Phase I Investigation of interactive technologies for a risky behaviors program for mildly mentally handicapped youth.* Silver Spring, MD: Macro Systems, Inc.

Colker, L.J., E.P. Robey, and C.D. Harris. 1990. *Final report - Phase I Investigation of interactive technologies for early math and science concepts for preschool children*. Silver Spring, MD: Macro Systems, Inc.

Products

Working with Math

Computer Experience

TenCORE, PILOT - Authoring

SPSSX - Statistical Analysis

BASIC, Logo - Programming

Wide variety of PC and Macintosh applications software including graphics, word processing, desktop publishing, and database.

Honors and Awards

Phi Theta Kappa, 1983

Professional Affiliations

Council for Exceptional Children

National Council of Teachers of Mathematics

Learning Disabilities Association

Leo J. Ryan III

Education

School	Degree	Area of Concentration	Date
The American University	M.A.	International Communication	In Progress
Western Maryland College	B.A.	Communications	1987
Institute of Spanish Studies, Valencia, Spain	--	Credits applied towards Spanish minor	1986

Employment

Employer	Title	Dates
Macro Systems, Inc.	Consultant	1988-
Macro Systems, Inc.	Research Librarian/Proofreader	1987-1988
International Language Institute	ESL Teacher	1987
Western Maryland College	Apprentice Spanish Teacher	1986-1987

Work Experience

As a Macro consultant, Leo Ryan has accumulated a wealth of experience in health, communications, program evaluation, research and international training.

U.S. Department of State, Bureau of International Narcotics Matters (INM)--Mr. Ryan is currently delivering drug abuse demand reduction training to middle and upper level officials throughout Latin America. Training sessions are based on a series of courses developed by INM and address the general areas of program evaluation, public awareness, primary and secondary prevention, law and social policy, and the coordination and administration of drug abuse policy.

Mr. Ryan also assisted in developing training materials for an inter-American conference held in the Dominican Republic. At the conference, representatives from Latin America and Portugal were trained on effective methods for developing national public awareness campaigns to reduce the demand for drugs in their nations. Specifically, Mr. Ryan assisted in designing a research guide for data collection and a national profile model for analyzing national resources.

Under a separate task in Macro's contract with INM, Mr. Ryan is in charge of collecting and disseminating narcotics-related information as requested by U.S. Embassies and indigenous prevention organizations worldwide. He has also coordinated the visits of foreign officials interested in alcohol and drug abuse prevention under the Bureau of International Narcotics Matters' Executive Observation Program.

Organization of American States, Inter-American Drug Abuse Control Commission--Mr. Ryan recently assisted in the coordination of an international teleconference to focus on conveying the latest trends in health communications and laying the groundwork for public/private sector cooperation in mass media efforts to deter drug abuse in the Americas. He was chiefly responsible for identifying, assessing, and translating relevant international public service announcements that were assembled into a 30-minute videotape produced for the teleconference. He played a major role in writing the fundraising brochure that was used in conjunction with the teleconference as well as other promotional activities designed to increase the event's visibility.

Office for Substance Abuse Prevention--For Macro's Media and Materials Development Project, Mr. Ryan assessed Spanish-language drug abuse-related messages and materials in order to enhance outreach to Hispanic populations in the United States through public education campaigns and related efforts.

Office of Community Services--Mr. Ryan provided technical assistance to grantees of the Development Partnership Program in refining and strengthening their project plans and evaluation designs. He reviewed the evaluation results of completed projects and assisted to develop options and recommendations for a mechanism to disseminate those results. This program is designed to promote innovative approaches to development projects that foster self-sufficiency in impoverished U.S. citizens, and several of the grantees have modelled their projects after initiatives that have been successful in lesser developed countries.

Health Resources and Services Administration, Office of Maternal and Child Health--Mr. Ryan recently worked on a project designed to identify barriers to, and determine strategies and practices conducive to, the implementation of One-Stop Shopping for perinatal care. As a project analyst, he visited several states to collect information on local efforts to coordinate eligibility requirements of Medicaid, WIC, and MCH programs and co-locate health services for pregnant women and their infants.

National Institute on Drug Abuse--For a 3-year contract with NIDA to design a community education model for communities facing resistance to the establishment of drug abuse treatment facilities, Mr. Ryan coordinated and supervised the conducting of 50 telephone discussions with treatment program administrators and professional staff. These discussions helped to determine the dimensions of treatment and citing problems faced by treatment facilities.

American Association of Diabetes Educators (AADE)--Mr. Ryan played a major role in administering the initial course offerings for the newly created Advanced Studies Institute for Diabetes Education (ASIDE). He created a database to monitor course costs and to assist in ordering materials for each course. He maintained a separate database that was designed to perform mail merges for all ASIDE mailings, register students and monitor their academic progress, and generate course rosters. Mr. Ryan was also responsible for reviewing all applications for admission and for maintaining the Institute's financial records.

Mr. Ryan previously served as Macro's research librarian, supervising and maintaining a corporate research center which houses over 1,000 volumes and subscribes to over 100 periodicals. He was responsible for both internal and external information requests, and conducted literature searches on a number of online databases.

Before joining Macro, Mr. Ryan worked as a teacher of English as a Second Language at the International Language Institute, instructing beginning-level English classes which consisted of students from all corners of the globe. While a student at Western Maryland College, he worked as an apprentice Spanish teacher.

Since 1986, Mr. Ryan has volunteered his communication skills and his knowledge of the inter-American system as an advisor to the Model Organization of American States for high schools and universities. During his senior year at Western Maryland College, he worked as an intern in the Organization's Press Division.

Professional Affiliations and Honors

Society for Intercultural Education, Training, and Research (SIETAR)
Outstanding Youngman of America--1987
Phi Beta Kappa--1987
Lambda Iota Tau (International Literary Honor Society)--1987

Computer Experience

Hardware: Apple and Wang Word Processors, PC XT, PC AT
Software: PASCAL, WordPerfect, VWIII, LOTUS, dBase III

Sharon Kay Stout

Education

School	Degree	Area of Concentration	Date
Cornell University	Ph.D. (ABD)	Collective Bargaining, Labor Economics, Sociology	--
Cornell University	M.S.	Collective Bargaining, Labor Economics	1984
University of Massachusetts, Amherst	M.A.	Philosophy	1974
University of California, Berkeley	B.A.	Philosophy	1972

Employment

Employer	Title	Dates
Macro Systems, Inc.	Research Specialist	1990-
Institute for Women's Policy Research	Research Consultant	1989-1990
Economic Policy Institute	Research Associate	1987-1989
Department for Professional Employees, AFL-CIO	Research Consultant	1986-1987
Cornell University	Research/Teaching Assistant	1980-1985
Pillsbury, Madison, and Sutro	Legal Assistant	1979-1980
Orrick, Herrington, Rowley, and Sutcliffe	Legal Assistant	1975-1979
University of Massachusetts, Amherst	Teaching Assistant	1973-1974

Work Experience

Ms. Stout brings her training and experience in research and policy analysis to Macro's evaluation efforts. Her knowledge of staffing, hiring, compensation, labor market, and human capital issues and models strengthens Macro's work on human services. Her strengths include analyzing qualitative and quantitative data for patterns of interest, and summarizing these patterns concisely.

As a research specialist for Macro, Ms. Stout is co-authoring a series of monographs and publications on the implementation of 130 demonstration programs working with youth at high risk of substance abuse as part of a 3-year evaluation for the Office for Substance Abuse Prevention. Among the issues covered in these monographs are the viable strategies used by the grantees in planning and implementing the start-up phase, recruiting and retaining clients and staff, developing and maintaining community networks, and recognizing and addressing evaluation uses and issues in program implementation. She is also writing a handbook directed to future grantees on implementation issues and strategies.

While working for Macro, Ms. Stout reviewed and revised the draft questionnaire and item specifications to be used in a Study on the Underlying Causes of Youth Homelessness sponsored by the Administration for Children, Youth, and Families.

As a research consultant for the Institute of Women's Policy Research, Ms. Stout researched family policy, child welfare, and domestic violence issues. She solicited and raised funds to support research initiatives in these areas, and wrote or co-authored several research proposals. For the Institute's Third Annual Research Conference, she reviewed papers submitted for consideration, suggested themes and organized panels, and invited additional speakers.

While working for the Economic Policy Institute as a research associate, Ms. Stout researched and co-authored an EPI publication on trade. She edited and revised economic policy papers for publication on topics such as housing affordability, the Job Training Partnership Act, trade policy, and American living standards. She researched and summarized policy issues and options, and wrote letters to newspaper editors for publication. As part of her duties, she conducted statistical analyses and produced graphs and charts for EPI publications and news releases.

As a research assistant at Cornell University, Ms. Stout researched literature on social networks, community organizing, and allocation of resources. She used SPSS-X, SAS, and APL to create datasets from a variety of data sources and conducted statistical analyses using these datasets. As a teaching assistant, she assisted in teaching an organizational behavior course.

While a legal assistant with Pillsbury, Madison and Sutro, Ms. Stout worked with clients' experts on statistical evidence (SAS and SPSS regression output), conducted statistical tests, and suggested revised model specifications. She summarized economists' testimony and drafted questions for subsequent cross-examination. She worked with computerized litigation support systems, including specifying fields to be captured in coding data from clients' records.

As a legal assistant with Orrick, Herrington, Rowley and Sutcliffe, Ms. Stout organized and conducted document productions as part of the civil discovery process. For one such production, she interviewed company management and staff in the client's personnel, accounting, and computer services departments, and reviewed their record-keeping systems. She collected sample forms and documents, cataloged the data elements and sources pertinent to the plaintiff's request for production of documents, and analyzed the most effective ways to respond to the request. Recognizing the impact of processes on outcomes, she suggested revisions in personnel practices which were transmitted by attorneys to the client. She researched legal, technical, and factual issues and wrote memoranda. As part of her work on Title VII discrimination cases, she analyzed data and conducted statistical tests.

While a teaching assistant at the University of Massachusetts, Ms. Stout assisted in teaching courses. As part of an interdisciplinary team teaching American philosophy, she researched, wrote, and delivered lectures for the course.

Publications and Presentations

Implementation Issues and Viable Strategies: Lessons Learned from the High-Risk Youth Grantees. (in progress)

Client Recruitment and Retention: Lessons Learned from the High-Risk Youth Grantees (with Therese van Houten).
Presented at the OSAP Learning Community Conference, Washington, DC, February 13-15, 1991.

Manufacturing Imports from Developing Countries: A Comparison of U.S., Japanese and European Trade (with Larry Mishel). Presented at the "Global Imbalances" Conference, American University, May 27, 1989.

Changes in the Health Care Industries: Employment and Unionization. *Interface*. Department of Professional Employees, AFL-CIO, Spring, 1988: Volume 17.

Book Review: Organizing Women and Office Workers: Dissatisfaction, Consciousness and Action. In *The Industrial and Labor Relations Review*, July 1986, page 603.

Aronson, R., and S. Stout. 1985. Unionism among professional employees in the private sector. *Interface*. Department of Professional Employees, AFL-CIO, Washington, DC, 1985.

Kathleen Wholey

Education

School	Degree	Area of Concentration	Date
The Catholic University of America	M.A. (in progress)	Learning and Instruction	
Spring Hill College	B.S.	Political Science	1981

Employment

Employer	Title	Dates
Macro Systems, Inc.	Consultant	1988-
Macro Systems, Inc.	Research Analyst	1986-1987
Metasystems Design Group, Inc.	Communications Consultant	1985-1986
The Possible Society	Associate Director	1984-1985
Federal Election Commission	Editorial Assistant	1982-1983

Work Experience

Ms. Wholey, a consultant with Macro, has a B.S. in political science from Spring Hill College (Mobile, Alabama), and is working toward a master's degree in Learning and Instruction, which emphasizes educational technology, at The Catholic University of America (Washington, DC). Ms. Wholey has participated in materials development projects as well as several major qualitative and quantitative research studies while at Macro.

Ms. Wholey is currently field test coordinator in a project sponsored by the Office of Special Education Programs (OSEP), U.S. Department of Education. The project is investigating the role of computers in support of artistic expression by developing a drawing program driven by voice recognition for use by school children with minimal manual dexterity. Macro used the Delphi technique during the design stage to cull expertise from leaders in the fields of physical disabling conditions and microcomputer technology. Ms. Wholey developed all measurement instruments, conducted onsite observations of field test participants, and synthesized formative evaluation data for review by the principal investigator, project director, and design team. She is testing its use at multiple sites in the Washington, DC area.

In Using Simulation Technology to Promote the Social Skills of Youth in Job-Related Settings, Ms. Wholey wrote scripts for the taped scenarios and provided assistance in preproduction and postproduction activities. For the accompanying guidebook, Ms. Wholey designed probes for teachers to use to initiate class discussions, and three activities at different levels of difficulty, to supplement video and computer-based instruction. The package covers 14 topics such as hygiene, punctuality, being polite, and responding appropriately to criticism. She was also responsible for collecting and analyzing data on social skills; the employment status of students; degrees of support from superintendents, principals, and employers; and the efficacy of the materials developed, tested, revised, and further tested. Her efforts contributed to the successful marketing of a package consisting of a videotape, computer software, and teacher's guidebook to American Guidance Services, a major educational software publishing firm in the United States.

Ms. Wholey served on a team of three conducting a feasibility study of the use of interactive videodisc (IVD) technology to dissuade at-risk teens from participating in risky behaviors such as tobacco, alcohol, and drug use. Because many at-risk youth learn best with visual instruction and concrete examples, IVD is particularly persuasive with this audience. The simulation format proposed would allow the user to experience vicariously the immediate and long-term results of decisions made regarding the use of both licit and illicit drugs. Ms. Wholey was responsible for the literature review, identifying and abstracting pertinent articles and developing a framework in which instructional design was accomplished. This study and other experience in education grounded in social learning theory have given Ms. Wholey insight into the components of effective decision making (goal formation and proximal sub-goal attainment), the necessity of matching talent and target audience in features such as age, ethnicity and race, and socioeconomic status; and high self-esteem and self-efficacy as factors in attaining success.

Ms. Wholey served on an ED/OSEP grant, "Using Interactive Videodisc in Evaluating and Training Job-Related Math Skills." This project resulted in two interactive videodiscs, a single-sided assessment disc and a double-sided instructional disc. The assessment videodisc provides direct student access to a series of vocational simulations in which specific assessment probes are used to determine the existing job-related math skill level in nine identified skill areas. The instructional disc is focused to remediate skill deficits identified in the assessment. Both discs contain a recordkeeping system capable of providing the instructor with a detailed report of each student's status. During the analysis phase, Ms. Wholey was responsible for conducting the content analysis and subsequent review of specified skills. She developed instructional designs, story boards, and scripts, and provided technical assistance to the production company. The package was developed with the TenCORE Authoring Language for the IBM InfoWindow system.

In the "Model Program for Increasing the Social, Communication, and Community Living Skills of Moderately Mentally Handicapped Youth," an important facet of the program was the recruitment of volunteers on behalf of the Washington, DC, field site. Ms. Wholey had the responsibility for coordinating and tracking the flow of data between sites in Washington, DC and Ohio, and an independent evaluation. She created a system that allowed her to easily gather pretest and posttest data, data on numerous subjective instruments, and interim reports from 3 groups of approximately 25 students from each of the sites. Ms. Wholey developed, refined, and implemented a public service advertising campaign for local radio, television, and cable stations, culminating in an invitation to the project manager for a broadcast interview by one local radio station. She contacted numerous newspaper and special interest newsletter editors for space to make a plea for volunteers, and posted bulletins on boards in libraries, supermarkets, and colleges. Ms. Wholey also assisted in the design and development of a photographic essay book that explicates the planning and development of the model for others to use, working closely with the project director to infuse in it the idea of improving the quality of life and expanding the universe of possibilities for people with disabilities by facilitating their integration into communities.

Another of Ms. Wholey's projects was "Improving the Instructional Design and Use of General Software for Practical Application with Handicapped Students." This program, also funded by the Office of Special Education Programs, U.S. Department of Education, focused on the development and use of productivity tool software for use with special needs students. Ms. Wholey coordinated the activities of three external consultants in drafting and evaluating computer-based lessons. Ms. Wholey was responsible for the development of instruments for the field test of the guide, the implementation of the field test, and the preliminary analysis of responses. Finally, she completed the literature review and an initial analysis of data for two products. The first is a lesson book that encourages classroom teachers to use general software with their students. The second, for software designers and developers, indicates the instructional needs of cognitively impaired students, and suggests principles of design that will aid the population as well as educational software product developers.

Ms. Wholey is active in two other research projects for the U.S. Department of Education. She is a member of the research team on a grant to study special education administrative involvement in computer implementation. The second phase of this project, currently underway, uses case study methodology to examine school districts effectively integrating technology into their practices and procedures. The study's findings and information will be incorporated in a *Guidebook for Special Education Administrators*, which will include concrete examples of

the practices found to be effective. Ms. Wholey has assisted in the design of interview instrumentation and data collection forms, and is conducting interviews and observations. Ms. Wholey will be responsible for the write-up of one exemplary school district.

Ms. Wholey also serves on an OSEP-funded research project, "Evaluation of the Integration of Technology for Instructing Handicapped Students." This effort focuses on the effective integration of technology into the curriculum of high school level mainstreamed special education students. The ultimate goal of the project is the development and field testing of a model of effective practices for integrating technology into the curriculum results. Results will be disseminated nationally. Ms. Wholey has collected data from diverse sources within a large suburban school district and actively participated in its analysis.

Ms. Wholey is also working on a Department of Labor study that evaluates the Unemployment Insurance Quality Control Program. The primary issue is the examination of consistency in investigation, coding, review, and rereview of cases selected for the QC sample, which may result in variation from investigator to investigator, from State to State, or from region to region. She supervised the difficult process of forms design and development, working closely with representatives from five States as well as graphics and word processing staff. Ms. Wholey is responsible for the creation of databases for regional and national data, and is assisting in verifying the database created for data at the investigator level. The success of this project rests with the accuracy of the databases and their manipulation.

In a project recently completed for the Office of Minority Health, DHHS, Ms. Wholey supported a contract to systematically identify and assess evaluations of federally funded AIDS prevention programs targeted to minority populations. Minority communities, particularly the Black and Hispanic communities, have been disproportionately affected by the HIV epidemic in the United States. Ms. Wholey assisted in defining which of a broad array of elements, including target population, evaluation methodology and focus, instrumentation, media and materials used, and risk behaviors targeted should be gathered in an effort to study objectively the efforts and effectiveness of prevention programs at the community level.

Publications

Appell, L.S., M.V. Lichtman, C.D. Harris, and K. Wholey. 1989. *Final report: Using simulation technology to promote social competence of handicapped students*. Silver Spring, MD: Macro Systems, Inc.

Harris, C.D., E.P. Robey, K. Wholey, and R. Pels. 1989. *Final report: An interactive videodisc program to evaluate and train job-related math skills for transition*. Silver Spring, MD: Macro Systems, Inc.

Cameron, C., K. Hurley, and K. Wholey. 1988. Electronic spreadsheets and data base management. In *Integrating computers into the curriculum: A handbook for special educators*, ed. M.M. Behrman. San Diego: Little, Brown and Company.

Harris, C.D., and K. Wholey. 1988. *Social skills on the job* (guidebook, computer software and videotape). Minneapolis, MN: American Guidance Services, Inc.

Harris, C.D., E.P. Robey, and K. Wholey. 1989. Assessing and training job-related math skills via an interactive videodisc program. In *Closing the Gap* 7(6):14.

Harris, C.D., E.P. Robey, K. Wholey, and R. Pels. 1989. *Final report: An interactive videodisc program to evaluate and train job-related math skills for transition*. Silver Spring, MD: Macro Systems, Inc.

Robey, E.P., K. Wholey, and C.D. Harris. 1990. *Final report - Phase I Investigation of interactive technologies for a risky behaviors program for mildly mentally handicapped youth*. Silver Spring, MD: Macro Systems, Inc.

Products

Social Skills on the Job
Working with Math

CLASS IV

Juanita C. Bourguillon

Employment

Employer	Title	Dates
Macro Systems, Inc.	Word Processing Supervisor/ Systems Administrator	1990-
Macro Systems, Inc.	Word Processing Operator	1985-1990
Love, Barnes, & McKew, Inc.	Clerical Supervisor	1979-1985
Digital Equipment Corporation	Field Service Secretary	1974-1977
Taag, Inc.	Technical Typist	1973-1974
Bendix Field Engineering Corporation	Clerk Typist III	1970-1972

Work Experience

As supervisor and systems administrator of Macro's word processing systems, Ms. Bourguillon is responsible for managing the primary functions of the word processing center. She is responsible for staffing, scheduling of work, and assigning work to the operators. Other responsibilities include interviewing, evaluating, and supervising word processing staff; producing word processing materials for proposals, contract deliverables, and in-house documents; serving as in-house advisor on word processing market technology; training all support staff on equipment applications and word processing procedures; and serving as primary backup to the production manager.

In addition, Ms. Bourguillon is one of four word processing staff, and inputs, formats, and revises proposals, reports, best and finals, abstracts, and empirical studies that are submitted under RFPs, as well as various in-house documents. These include exhibits, scientific equations, charts, tables, and any forms and standard correspondence associated with the above. Ms. Bourguillon is skilled in data entry on Lotus 1-2-3 and HP-3000D, and in graphics on Lotus 1-2-3. She assists in telecommunications operations (e.g., transferring files, opening and shutting down communications) upon request. She also assists in the graphic arts department, according to workload demands. All of Ms. Bourguillon's work involves strict adherence to Macro format and style requirements, as well as compliance with all deadlines. She uses photocopying and graphics equipment, personal computers, and the main switchboard.

Prior to this, Ms. Bourguillon worked as a field service secretary for Digital Equipment Corporation. As such, her responsibilities were to log-in service calls, compile monthly reports, transmit TWX's via teletype, and perform other general secretarial duties. Earlier, as a Technical Typist for Taag, Inc., Ms. Bourguillon was responsible for production of an RRS User's Guide, under contract through HEW. While at Bendix Field Engineering Corporation, Ms. Bourguillon's primary responsibilities were the production of updates to engineering manuals for NASA, as well as other general clerical functions.

Computer Experience

Software: Volkswriter, Wylbur, Samna, NBI4000, Lotus 1-2-3, dBase III, HP-3000D, Ventura Publisher, WordPerfect 5.0, 5.1

Hardware and other equipment: NBI4000, Xerox PC, IBM PC, Canon AP550 Memory Writer, Kroy, Xerox 9500 Copier

Katherine Hartmann Flint

Education

School	Degree	Area of Concentration	Date
University of Maryland	M.A. (in progress)	Health Education/Gerontology	--
Alfred University	B.A.	Gerontology	1987

Employment

Employer	Title	Dates
Macro Systems, Inc.	Research Associate	1990-
Macro Systems, Inc.	Research Assistant	1989-1990
Health Systems Agency of Western New York, Inc.	Project Review Associate	1988
Crawford Carriages	Manager	1988
United University Professions	Administrative Assistant	1987-1988
Allegany-Cattaraugus Hospice	Research Coordinator	1987-1988
Office for the Aging	Research Assistant	1986-1987
Fairland Nursing Home	Health Care Attendant/ Nurses Assistant	1986

Work Experience

Ms. Flint is currently the Project Coordinator on the Youth Risk Behavior Survey (YRBS) for the Centers for Disease Control. The YRBS is a national survey of attitudes, beliefs, and behaviors among 13,000 secondary school students in 22 states. Ms. Flint is responsible for overseeing the day-to-day operations of the survey. Her duties include calling 22 state education agencies, 134 districts/local education agencies, and 180 schools to obtain their participation in the survey; responding to clearance protocols of LEAs; gathering from LEAs, by phone, information related to local sample selection in preparation for data collection; assembling and mailing informational packages; and supervising distribution and processing of survey materials. Ms. Flint also assists in recruiting, training, and supervising field staff. She responds to requests from the field for materials, information, and assistance as well as serving as a backup data collector responsible for administering the survey in several local secondary schools. In addition, Ms. Flint is in charge of response tracking and followup. Upon receiving the data from the field, she is responsible for editing and coding the data before they are submitted for final analysis.

As a research associate, Ms. Flint was brought on to assist with the Evaluation of OSAP Demonstration Programs on Youth at High Risk for Substance Abuse. This 3-year evaluation involves chronicling the development of the OSAP demonstration programs for high-risk youth, repeated in-depth site visits to 60 programs, conduct of program evaluability assessments, pilot testing of innovative needs assessment and outcome evaluation procedures, construction of replicable program models, development of case studies in culturally appropriate prevention, and convening of a national evaluation conference. Ms. Flint's responsibilities included maintaining a tracking system of the review process for all 130 grantees; processing materials received from OSAP; preparing and mailing review

packets to consultants; calling reviewers to remind them of past deadlines for submitting their reviews; preparing materials for submission to OSAP; mailing draft project assessments to grantees; and tracking comments received from grantees.

As a research assistant, Ms. Flint worked on the biennial Maryland Adolescent Survey that sought to measure students behaviors and attitudes related to alcohol, tobacco, and drugs. First conducted in 1973, the survey was administered for the eighth time in the spring of 1989 by 215 public schools located in 23 of the state's 24 political subdivisions, making it the largest ever in both respects. A scientifically selected sample of 13,461 students took part. Ms. Flint was involved with editing and coding data returned by schools. In addition, she worked on the statistical analysis of student responses and assisted in the writing of the final report which was distributed statewide.

Previously, at Health Systems Agency of Western New York, Inc., Ms. Flint was responsible for the review and evaluation of Certificate of Need applications, totaling \$2.2 billion annually, for health and mental health facilities, programs, and service providers in an eight-county Western New York region. She was active in reviewing grant applications submitted for funding under various New York State Department of Health grant programs. She also provided staff support to the Regional Project Review Committee and Board of Directors, and served as staff liaison between the Agency and the public.

While with United University Professions, Ms. Flint was responsible for creating and managing new Camelot software applications and for public relations and information management. She also organized educational/training projects on topics of concern to chapter members.

As a research coordinator for the Allegany-Cattaraugus Hospice, Ms. Flint gathered, organized, and analyzed data for Certificate of Need applications. She initiated and maintained contacts with area service providers. She was active with marketing and public relations and presented informational seminars, as a volunteer, on hospice history and philosophy.

As a manager with Crawford Carriages, Ms. Flint supervised and trained new employees and developed weekly schedules. She managed all operating responsibilities during a transition to a new owner, including: accounting procedures, supply purchases, billing, inventory, telephone inquiries, and appointment scheduling. She assisted with marketing and public relations through meetings with advertising representatives, local government officials, and Common Council members.

Earlier, Ms. Flint worked for the Office for the Aging in Belmont, New York. There, she researched and co-authored a successful grant entitled Expanded In-Home Services for the Elderly Program (EISEP). She coordinated a new mobile meals program and participated in various outreach activities including the Senior Volunteer program, senior forums, and county fair informational seminars.

As a health care attendant/nurses assistant, Ms. Flint was in charge of the nonmedical needs of 12 to 14 patients. She was responsible for accurate observation of patients for change in mental or physical status. Ms. Flint initiated an emergency resuscitation program for the staff.

Ms. Flint is also an Emergency Medical Technician (EMT), state certified to deliver emergency aid. She ranked first in the 81-hour training course and is active with annual fundraising for the Bethesda Chevy Chase Rescue Squad.

Awards and Presentations

Member of Phi Kappa Phi Honor Society
Dean's List Honors Recipient 1983-1987

Linda A. McLaughlin

Employment

Employer	Title	Dates
Macro Systems, Inc.	Production Manager	1983-
Macro Systems, Inc.	Secretary to President	1983
Macro Systems, Inc.	Secretary to Vice President	1977-1983
Government Employees Insurance Company (Geico)	Secretary to Comptroller/Senior Vice President	1963-1977

Work Experience

Ms. McLaughlin has been with Macro Systems, Inc., since 1977 and has served as secretary to the president, a vice president, and several associates of the firm during that time. In her current position as production manager, Ms. McLaughlin is responsible for organizing all production workflow and ensuring that all documents are completed on schedule. She distributes work among, and coordinates with, support staff involved in typing, graphics, proofing, editing, photoduplication, and binding, and assures that all products adhere to Macro formats and style requirements. She also serves as proposal coordinator for the company. In this capacity she reviews the request for proposal to determine the typesize, illustrations, number of pages, and number of copies required; assigns a number to each proposal; sees that all sections are typed, corrected, reviewed, and duplicated; and prepares the final document for packaging and delivery. In addition to these responsibilities, Ms. McLaughlin is one of four word processing staff, and produces draft and final copies of all in-house documents.

In addition to her duties with Macro, Ms. McLaughlin serves one evening per week in a training capacity at a local business school, where she works with adults who wish to enter the work force but have no business skills. Ms. McLaughlin guides them in performing their classroom assignments in typing, WordPerfect, English grammar, and other courses they are taking at the business school.

As a secretary at Macro, Ms. McLaughlin carried out routine administrative secretarial duties, and acted as liaison between Macro and the firms that maintain the typewriters used throughout the office. This entailed keeping records of service contracts and meeting with representatives as necessary. Ms. McLaughlin also was responsible for materials management at Macro. She ordered and maintained adequate levels of all office supplies and kept continuing records of funds expended and inventory on hand.

Ms. McLaughlin also assisted the Graphics Department with cover and forms design; preparation of flowcharts, Gantt charts, and PERT charts; and preparation of overhead transparencies and other visual aid materials.

Prior to joining Macro, Ms. McLaughlin was secretary to the comptroller/senior vice president at Government Employees Insurance Company (Geico). In that position, she maintained corporate files on all budgets for the company, as well as coordinating activities among the five departments (Long-Range Planning, Materials Management, Corporate Real Estate, Data Processing Research and Control, and Systems Development) responsible to the comptroller/senior vice president.

Ms. McLaughlin has extensive knowledge of and expertise with all types of office equipment, including: (1) WordPerfect 5.0, (2) NBI OASys 64 word processing system, (3) IBM and Xerox electronic typewriters, (4) electronic calculator, (5) Xerox 5090, 9200, 9500, 1040, and 1075 photocopy machines, (6) transcription equipment, (7) electronic paper punching and binding equipment, and (8) a variety of specialized typewriters.

Hermine Theologus

Education

School	Degree	Area of Concentration	Date
Temple School	--	Shorthand	1970
George Washington High School	Diploma	Languages	1958

Employment

Employer	Title	Dates
Macro Systems, Inc.	Graphic Artist	1983-
Macro Systems, Inc.	Executive Secretary	1974-1983
Rogers, Mirabelli, and Berlanti	Legal Secretary	1973-1974
Westinghouse Electric Corporation	Senior Secretary	1971-1973
Lichtenberg and Luria	Legal Secretary	1970-1971
Westinghouse Electric Corporation	Junior Secretary	1968-1970
C&P Telephone Company	Teletype Operator	1967-1968
Markite Corporation	Electronics Tester	1958-1961

Work Experience

Ms. Theologus currently serves as Macro's graphic artist, a position she has held since 1983. Previously, she was the executive secretary for the firm's president, and secretary to several of the company's associates. In addition to her specific job responsibilities, Ms. Theologus has, since joining Macro, participated in various corporate projects requiring Spanish-to-English and English-to-Spanish translation capabilities. Born in Puerto Rico, Ms. Theologus has maintained her Spanish fluency, through use and study in school, and has been able to assist Macro in the Spanish translation and production of reports and manuals, including: correspondence and translation of a drug usage survey questionnaire for secondary schools in Ecuador; telephone interviews of postsecondary schools in Puerto Rico as part of a nationwide career school survey; procedures manuals for cost accounting and statistical utilization systems for the Puerto Rico Department of Health (DOH); special forms used to assess the implementation of the cost accounting system at 19 DOH hospitals; and special progress and instructional reports for DOH and Centro Medico Corporation.

As Macro's graphic artist, Ms. Theologus is responsible for producing all artwork and tabular material for all company documents. She utilizes an IBM-compatible PC equipped with various graphic software packages, including graphing and charting software, desktop publishing software, flowcharting software, and WordPerfect. She uses a variety of other graphic design equipment, including a computerized Kroy lettering machine, as well as standard drafting materials.

Prior to joining Macro Systems, Inc., Ms. Theologus was employed in secretarial positions for various firms. Earlier, she tested electronic elements for classified assignments at the Markite Corporation.

Julia Withers

Education

School	Degree	Area of Concentration	Date
University of Denver	B.A.	Mass Communications	1977

Employment

Employer	Title	Dates
Macro International	Editor	1991
BDM International	Media Products Coordinator	1990-1991
STX	Senior Technical Writer/Editor	1986-1990
National Academy of Sciences	Associate Editor	1985-1986
American Petroleum Institute	Editor	1984
US Dept. of Energy (subcontractor)	Writer/Editor	1978-1983
McGraw-Hill, Inc.	Editorial Assistant	1978

Work Experience

As Media Products Coordinator, Ms. Withers supervised the development of media products from initial conception through delivery. This involved researching literature, evaluating color visual material, and developing concepts for briefing books, brochures, posters, and decals. Ms. Withers also conceptualized and developed a mockup of a quarterly newsletter on spacecraft launches for NASA's Astrophysics Division.

For STX, Ms. Withers was responsible for producing the company's award-winning newsletter, supervising production of a monthly status report for 33 tasks on a contract with NASA's Goddard Space Flight Center (GSFC), and was a task leader on a separate GSFC contract. Ms Withers' responsibilities for producing the newsletter involved writing articles, obtaining photographs and graphics, assigning stories, working with graphic artists and printers, editing copy, reviewing paste-up and blueines, coordinating distribution, and training editorial assistants. Ms. Withers' responsibilities as a task leader involved managing a small technical resource library for Goddard's Space Data and Computing Division. She also wrote technical articles as requested by the Space Data and Computing Division for publication in a NASA journal.

Ms. Withers also coordinated the Third Global Change Technology Initiative workshop for GSFC, which included producing all publications, soliciting bids from hotels and conference centers, and negotiating contracts with outside vendors to provide computer rentals and backup photocopying services. Ms. Withers also assisted in producing the company's annual meeting from 1986-1989.

For the National Academy of Sciences, Ms. Withers edited the annual meeting proceedings of the National Research Council's Transportation Research Board. She also wrote articles for the *TR News*, and edited and coordinated production of various brochures and newsletters.

For the American Petroleum Institute, Ms. Withers produced a major section of the *Manual of Petroleum Measurements and Standards* and edited and proofread statistical tables and text.

For the U.S. Department of Energy, Ms. Withers worked as a subcontractor to the Energy Information Administration to produce publications for the National Energy Information Center. Her responsibilities included editing technical publications, coordinating design and layout, proofing galleys and bluelines, conducting press inspections, sizing half-tones, writing press releases and fact sheets, updating a weekly petroleum newsletter, writing and producing public information brochures, managing a computerized mailing list, performing online editing of statistical tables, and supervising 15 employees.

For McGraw-Hill, Inc., Ms. Withers proofread copy for Platt's Oilgram, a daily newsletter. She also monitored newswires and updated the archive file. She also produced a biweekly newsletter, the *Energy Legislative Service*, which chronicled and tracked all energy-related legislation pending before Congress.

Professional Affiliations

Women In Aerospace, 1990-present
Society for Technical Communication, 1988-1990

Honors

Certificate of Achievement, National Academy of Sciences, 1986
Merit Award (the Star), Society for Technical Communication, 1988
Group Achievement Award (COBE Project), STX, 1990
Merit Award (the Roentgen Satellite), Society for Technical Communication, 1991

Bibliography

- Withers, J. 1988. "Goddard's Space Data and Computing Division Joins the COBE Team." *Information Systems Newsletter*, Jet Propulsion Laboratory, Pasadena, CA. (Coauthor).
- Withers, J. 1989. "Scientific Visualization Technique for 3-D Terrain Mapping." *Information Systems Newsletter*, Pasadena, CA. (Coauthor).
- Withers, J. 1990. "COBE Signals Goddard's Entry Into NASA's New Space Exploration Era." *Information Systems Newsletter*, Pasadena, CA.

Market Facts Resumes

CLASS I

W. BURLEIGH (LEIGH) SEAVER

Vice President
Public Sector Research Group
Market Facts, Inc.

Education: Ph.D., Social Psychology, Northwestern University, 1971

M.A., Social Psychology, Northwestern University, 1970

B.A., Psychology, Yale University, 1967

Areas of
Expertise

Dr. Seaver is a Vice President in the Public Sector Research Group of Market Facts. He serves as project director on large-scale and complex studies and provides methodological consulting to a wide range of projects. He came to Market Facts in October 1987 from the Office of Analysis and Evaluation of the Food and Nutrition Service. There as Acting Director of Program Evaluation he managed a staff of 15 research professionals and an annual budget over eight million dollars. He directed research and program evaluations on the Food Stamp, WIC, and Child Nutrition Programs.

Following his graduate training at Northwestern University where he specialized in psychometrics, attitude measurement, and the design of experimental and quasi-experimental research, he was Assistant Professor of Psychology at the Pennsylvania State University. In 1977 he joined the National Highway Traffic Safety Administration where he evaluated demonstration projects and tested the effects of public information and education campaigns.

During 20 years in increasingly responsible positions he has planned, conducted, and managed surveys, program evaluations, demonstration projects, policy research, basic research, and methodological studies in a variety of substantive areas. Dr. Seaver is skilled in all aspects of conducting social science research from conceptualization and design through test and scale development, field data collection, multivariate data analysis, and preparation of reports.

SEAVER, W. Burleigh

Selected Project

Experience Representative studies Dr. Seaver has conducted at Market Facts and at two federal agencies include the following:

Evaluation of the Off-line EBT Demonstration

Market Facts is part of a team that is evaluating the costs and impacts of a Food and Nutrition Service demonstration project in which food stamp benefits are delivered electronically at the point of sale in grocery stores using smart card technology. Dr. Seaver heads the research design team and will direct the collection and analysis of data from food stamp recipients and grocers. The study will collect data from recipients using a combination of telephone and in-home personal interview methods.

Quality Control for Rental Assistance Subsidies

As the data-collection subcontractor to Macro Systems, Market Facts will conduct quality control interviews with tenants of rent-subsidized housing. The goals of this project are to establish an ongoing quality control sampling plan for HUD's rental assistance subsidy programs and to draw and evaluate the first sample. Market Facts contributed to the development of data collection instruments and field procedures and will conduct inperson interviews with a nationally representative sample of 5,400 low-income residents of subsidized housing. The interviews will include complete examinations of the income and assets of the household. Dr. Seaver serves as the corporate officer and as technical consultant on this project.

National Recreational Boating Survey

Dr. Seaver is the corporate officer managing a major nationwide survey for the U.S. Fish and Wildlife Service to estimate the consumption of fuel in motorboats used by recreational anglers and boaters. Data from this survey will be used to determine what percentage of motor fuels excise tax should be allocated to the Aquatic Resources Trust Fund. The survey is being done at the national level by telephone using a panel of boaters who will maintain logs and be interviewed each quarter about their boat usage during the past three months. To get state-by-state estimates, questionnaires are being mailed to more than 370,000 registered boaters using list samples from registration files in all 50 states and DC.

SEAVER, W. Burleigh

U.S. Air Force CATI Surveys

Dr. Seaver serves as corporate officer and task leader on a task-order contract for the United States Air Force. The contract provides for world-wide surveys of Air Force personnel using computer-assisted telephone interviewing technology. Market Facts performs three types of studies under this contract: rapid turn-around (brushfire) studies in which data are needed within 36 hours; longitudinal monitoring studies on issues related to personnel retention conducted at regular intervals (periodic pulsing studies); and special studies on customized topics. Over the three-year life of the contract, Market Facts conducted 14 surveys, successfully meeting all task requirements.

Market Analysis and Program Planning System

For the United States Army Community and Family Support Center, Dr. Seaver was Director of Market Surveys and Analysis in a project designated to conduct market surveys and develop business planning systems at 130 Army installations around the world. This project developed an efficient system to identify consumer needs and preferences and satisfaction with existing Morale, Welfare and Recreation Programs that serve soldiers and their families. The Army decided not to exercise the option to implement the system because of the major redeployment of personnel for Operation Desert Storm.

Personal Identifier Project

Market Facts was the data-collection subcontractor to The Orkand Corporation on a project for the State of California Department of Motor Vehicles. That project evaluated several technologies that hold promise for uniquely identifying persons applying for drivers licenses. If successful, personal identifiers could be used to prevent drivers from becoming licensed in multiple states. In this evaluation Market Facts collected public acceptance data related to each technology and biometric identification data from 40,000 persons. Dr. Seaver was the Market Facts project director.

Effects of Incremental Advertising on Philately Purchases and Retention

For the US Postal Service Dr. Seaver conducted an evaluation of an advertising campaign to stimulate increased purchases and retention of U.S. commemorative stamps among casual collectors. This study required intercept interviews with 23,000 postal patrons in post office lobbies in six test markets. The study involved precise measurement of the incidence of casual stamp collectors and, among collectors, measurement of attitudes

SEAVER, W. Burleigh

and behaviors regarding stamp collecting. Awareness of advertising, recall of video images and themes, and ability to interpret advertising messages were measured as indicators of the success of varied advertising campaigns in communicating to current and potential collectors.

Formative Evaluation of On-line Information Service

Dr. Seaver designed and directed a formative evaluation of a roll-out trial of an on-line computer information service. The project used focus groups and telephone interviews with subscribers to provide feedback on user interfaces, system navigation, manuals, information providers, technical support services, billing, and other features of the service. Three waves of qualitative and quantitative data collection provided the basis for product managers to modify the service to improve subscriber satisfaction. The service substantially exceeded its first year subscription goals.

Conjoint Study of Computer On-line Information Service

Dr. Seaver designed and conducted a study to estimate the expected market response to different plans for bundling basic and premium on-line information services at a range of fixed monthly prices. The goal of the study was to identify trade-offs between price and services and the likely response of current and potential subscribers to a set of candidate offerings. In both segments of the target market, active and inactive subscribers responded to a self-administered mailed questionnaire incorporating a full-profile conjoint experiment. Analyses supported a model to project the relative revenue potential of different combinations of services and prices.

Interest of Young Men and Women in Careers in Aviation

Dr. Seaver was project director on a study for the U.S. Air Force which examined the level of interest of high school and college students in careers in aviation, especially as military pilots. Focus groups explored reasons underlying positive and negative attitudes toward careers as military pilots among high school and college students who had an interest in flying. A cost-effectiveness component evaluated the relative life-cycle cost of recruiting, training, and retaining male and female pilots and navigators. A second component designed a survey that would locate and interview a sample of young men and women to learn their perceptions of military aviation careers, and to estimate their incidence in the population and demographic characteristics.

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The Evaluation of the Reading, PA Electronic Benefit Transfer Demonstration

The Food and Nutrition Service conducted this demonstration and evaluation to assess the feasibility of issuing food stamp benefits using a point-of-sale card. Food stamp customers charged food purchases against balances in their food stamp accounts through on-line terminals in stores. Results showed that recipients, stores, and banks used the new system successfully and preferred it over the previously used coupon system for issuing benefits. This evaluation required extensive field interviewing of recipients and grocers and observations of store checkout transactions to estimate costs and benefits of the new system of the traditional coupon system which it replaced. Dr. Seaver was the project supervisor.

The National WIC Evaluation

Collected longitudinal data from a nationally representative sample of over 5,000 pregnant women to evaluate the nutritional, health, and pregnancy-outcome effects of participating in WIC during pregnancy. The study tested women's knowledge, attitudes, health behaviors, and diets as well as physical measurements such as height, weight, and skin-fold thickness. It also used vital statistics, participation records, and Census data from 20 states to test hypotheses that participation in WIC led to improved pregnancy outcomes and better fetal and infant survival. Dr. Seaver was the project officer and directed all phases of the project.

The Evaluation of Meal Provisions for the Homeless

Collected field interview data from a nationally representative sample of 2,000 homeless persons who were users of shelters or soup kitchens and of 200 providers of service to the homeless. Homeless persons provided information on the sources of their meals, the quality of their diets, their health and nutritional status, their patterns of use of social services, and their demographic characteristics. Dr. Seaver was the project supervisor.

The Evaluation of the Work Registration and Job Search Demonstration

As part of an effort to improve services that help food stamp recipients find employment, this project evaluated the effectiveness of seven different work registration and job search models. This study was conducted as a randomized experiment in 21 cities across the country. Data on job placements, weeks of employment, earnings, and transfer payments were collected at intake and after three and six months following registration for work. Dr. Seaver designed the experiment and evaluation methodology and supervised all phases of the project.

SEAVER, W. Burleigh

The Survey of Recipients of the Temporary Emergency Food Assistance Program (TEFAP)

This project was a descriptive survey of people who received free USDA cheese, butter, and other commodities at periodic local distributions. This nationally representative field survey provided the first data on who receives TEFAP commodities, their numbers and characteristics, and how they use the free commodities. The data allowed estimates of how receipt of free cheese and butter affected market purchases of these foods. Interviews took place at sites where distributions were taking place and required flexible, but rigorous, on site sampling in more than 200 locations. Dr. Seaver was the project supervisor.

The Evaluation of the Puerto Rico Nutrition Assistance Program

Assessed the operations and economic and nutritional impacts of the cash assistance program which replaced food stamps in Puerto Rico. This study included in-home interviews with a statistical sample of over 2,000 households throughout Puerto Rico to test how household food purchases and consumption were affected by the receipt of benefits. Dr. Seaver supervised this project and led the in-home team that conducted an earlier evaluation of the same program.

Previous Professional Experience

- 1979-1987 Branch Chief and Acting Director of Program Evaluation, Food and Nutrition Service, USDA. Managed an interdisciplinary staff of 15 professional evaluators and an annual budget over eight million dollars. He completed and published over 15 major program evaluations, demonstrations, and policy research projects on domestic food assistance programs.
- 1977-1979 Social Science Research Specialist, National Highway Traffic Safety Administration, DOT. Evaluated traffic safety programs designed to improve driver and pedestrian safety behaviors. Objectives of programs he evaluated included increasing safety belt usage, preventing recidivism among convicted drinking drivers, encouraging parents to carry young children in child car safety seats and improving the performance of young drivers.

SEAYER, W. Burleigh

1970-1977 Assistant Professor of Psychology, The Pennsylvania State University. Taught graduate and undergraduate courses in research methods, scaling and measurement, social psychology, and program evaluation. He published research in the areas of methodology, human fertility, impacts of education, and energy conservation.

Publications: The National WIC Evaluation: Background and introduction. American Journal of Clinical Nutrition, 1988, 48, 389-393. With D. Rush, D.G. Horvitz, J.M. Alvir, G.C. Garbowski, J. Leighton, N.L. Sloan, S.S. Johnson, R.A. Kulka, and D.S. Shanklin.

The National WIC Evaluation: Study methodology and sample characteristics in the longitudinal study of pregnant women, the study of children, and the food expenditures study. American Journal of Clinical Nutrition, 1988, 48, 394-411. With D. Rush, D.G. Horvitz, J. Leighton, N.L. Sloan, S.S. Johnson, R.A. Kulka, J.W. Devore, M. Holt, J.T. Lynch, T.G. Virag, M.B. Woodside, and D.S. Shanklin.

The National WIC Evaluation: Longitudinal study of pregnant women. American Journal of Clinical Nutrition, 1988, 48, 439-483. With D. Rush, N.L. Sloan, J. Leighton, J.M. Alvir, D.G. Horvitz, G.C. Garbowski, S.S. Johnson, R.A. Kulka, M. Holt, J.W. Devore, J.T. Lynch, M.B. Woodside, and D.S. Shanklin.

The National WIC Evaluation: Study of infants and children. American Journal of Clinical Nutrition, 1988, 48, 484-511. With D. Rush, J. Leighton, N.L. Sloan, J.M. Alvir, D.G. Horvitz, G.C. Garbowski, S.S. Johnson, R.A. Kulka, J.W. Devore, M. Holt, J.T. Lynch, T.G. Virag, M.B. Woodside, and D.S. Shanklin.

The National WIC Evaluation: Study of food expenditures. American Journal of Clinical Nutrition, 1988, 48, 512-519. With D. Rush, M.R. Kurzon, and D.S. Shanklin.

The Project Officer's Role in Managing Federal Program Evaluations. In R. G. St. Pierre (Ed.), Management and Organization of Program Evaluation. New Directions for Program Evaluation, no. 18. San Francisco: Jossey-Bass, June 1983. With J. Radzikowski.

Evaluation of the Puerto Rico Nutrition Assistance Program. FNS Technical Report, 1983. Available through National Technical Information Service. With L.V. Esrov.

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Driver Education and the Licensing of 16 and 17 Year Olds. Journal of Safety Research, 1980, 12, 2. With J.L. Nichols, W.L. Carlson, and R.B. Voas.

An Analysis of the Impact of Driver Education on the Licensing of 16 and 17 Year Olds. NHTSA Technical Report, DOT HS-804 850, August 1979. With J.L. Nichols, W.L. Carlson, and R.B. Voas.

Effects of Unreliable Measurement on Tests of Statistical Significance. NHTSA Technical Memorandum, August, 1978.

Parenthood Motivation Questionnaire: Scales for Measuring Motivations for and against Parenthood. JSAS Catalog of Selected Documents in Psychology, 1977, 7, 69, Ms. 1519. With E.P. Kirchner, M.K. Straw, and M.E. Vegega.

Developing Measures of Parenthood Motivation. Final report, Grant No. HD06258-03, National Institute of Child Health and Human Development, 1977. With E.P. Kirchner, M.K. Straw, and M.E. Vegega.

Decreasing Fuel Oil Consumption through Feedback and Social Commendation. Journal of Applied Behavior Analysis, 1976, 9, 147-152. With A.H. Patterson.

Regression Discontinuity Analysis of Dean's List Effects. Journal of Educational Psychology, 1976, 68, 459-465. With R.J. Quarton.

Stress and Discomfort in Psychological Research: Subject Perceptions of Experimental Procedures. American Psychologist, 1975. With J.L. Farr.

Effects of Naturally-Induced Teacher Expectancies. Journal of Personality and Social Psychology, 1973, 28, 333-342.

Increases in Treatment-Outcome Correlations as Measures of College Impact. Proceedings of the 1971 Annual Meeting, American Political Science Association, 1971.

CLASS II

DANIEL E. MCGOLDRICK

Senior Study Director
Public Sector Research Group
Market Facts, Inc.

Education: Ph.D. Candidate, Political Science, Michigan State University, Coursework completed: 1984.

M.A., Political Science, Michigan State University, 1981.

B.A., Political Science, University of Georgia, 1979.

Areas
of
Expertise:

Mr. McGoldrick has considerable expertise in the conduct of telephone, mail, and in-person surveys. Mr. McGoldrick is experienced in the application of a wide variety of data collection methodologies to research problems. Mr. McGoldrick has managed extensive research on issues of health care, public policy, and concerns of older Americans including housing (reverse mortgages, retirement communities, nursing homes, and independent living arrangements), self-care, insurance, finances, and consumer behaviors. He has designed and managed numerous field studies requiring data abstraction from local government offices, as well as in-home personal interviewing.

Specific
Project
Experience:

Now in his eighth year at Market Facts, Mr. McGoldrick has participated in the design, management, and analysis phases of a wide range of studies. A sampling of these projects appears below:

Evaluation of the Off-Line EBT Demonstration

Mr. McGoldrick is the research manager and lead analyst in this evaluation of off-line technology to deliver food stamp benefits. This project, conducted for the Food and Nutrition Service will examine the impacts of off-line EBT on recipients, food retailers, financial institutions, and state, county, and federal Food Stamp Program staff. Mr. McGoldrick led the team that designed all data collection instruments for recipients and retailers and is managing the collection and analysis of recipient and retailer data.

MCGOLDRICK, Daniel E.

Evaluation of OBRA Changes in the Food Stamp Program

For the Department of Agriculture/Food and Nutrition Services, Mr. McGoldrick assisted in the design of an abstraction instrument, the writing of a data collection manual, and the training of data abstractors for the collection of longitudinal data from 60 local food stamp offices nationwide. Mr. McGoldrick was also responsible for direct supervision of abstractors in 16 of the food stamp locations.

Education Program for Older Women

Mr. McGoldrick served as project manager on a study for a major national association that was developing an educational program directed at the financial information needs of older women. This study involved focus groups as well as telephone interviews with 1,000 women aged 50 and older. A comparison sample of 200 men aged 50 and older was also conducted. Mr. McGoldrick assumed overall responsibility for the project. He developed the questionnaire for the survey and analyzed and reported the data upon the completion of interviewing.

Housing Needs of Older Americans

For a national association of seniors, Mr. McGoldrick conducted a survey involving 1,500 telephone interviews with individuals aged 55 and older regarding their housing needs. The survey addressed issues such as preferred living arrangements, planning for future housing, and household activities with which older individuals require help.

Residential Retirement Community Survey

To assess interest in a residential retirement community among members of a fraternal organization, Mr. McGoldrick designed and managed a combined mail and telephone survey of organization members. The survey involved the mailing of a concept description to members and subsequently interviewing them by telephone.

Survey of Awareness & Ownership of Home Decoders

For the National Captioning Institute, Mr. McGoldrick was involved in a survey of three groups (parents of hearing impaired children, hearing impaired adults, and pre-vocationally deaf adults) to gauge awareness and ownership of home decoders for closed caption television. The results of the study were used in the development of a marketing plan for home decoders.

MCGOLDRICK, Daniel E.

Consumer Behavior of Older Americans

For a large national association, Mr. McGoldrick directed a telephone survey to assess the consumer behavior of older Americans, especially in comparison to younger consumers. Using a database from the company's weekly national omnibus telephone survey, TeleNation™, Market Facts was able to complete telephone interviews with 400 consumers aged 75 and older, including 200 with individuals 80 and older. The study focused on knowledge of consumer rights and protections as well as perceptions of the fairness of various business practices.

Older Americans' Interest in Reverse Mortgages

For a large national association, Mr. McGoldrick directed two surveys, one telephone and one in-person, to gauge the interest of older consumers in different types of reverse mortgages.

Self-Care Behaviors Among the Elderly

With the University of North Carolina Health Services Research Center, Mr. McGoldrick participated in the design and pilot testing of an in-person survey instrument to assess the extent to which the non-institutionalized elderly engage in behaviors that contribute to their health maintenance and improvement. Market Facts then used the instrument to conduct 3,300 in-home interviews with the community-based elderly.

Health and Diet Survey

For the U.S. Food and Drug Administration, Mr. McGoldrick recently managed a random digit telephone survey of over 4,000 consumers regarding their health and diet knowledge and behaviors. The sample included a national probability sample as well as oversampling of minorities.

Three Mile Island Follow-up Morbidity Surveys

For the Pennsylvania Department of Health (PDOH), Mr. McGoldrick managed four large telephone surveys designed to assess any possible adverse health effects of the 1979 accident at Three Mile Island. His responsibilities included producing the questionnaires from drafts provided by PDOH, writing interviewer instructions and training interviewers for both the telephone surveys and in-person validations, and developing the sample for the control site survey.

MCGOLDRICK, Daniel E.

Previous
Professional
Experience:

Prior to joining Market Facts in 1984, Mr. McGoldrick served as an instructor of quantitative research methods for the social sciences at Michigan State University. While at Michigan State, Mr. McGoldrick also assisted for two years in the program evaluation of the Lansing, MI site for the Vocational Exploration Demonstration Project, a federally funded youth employment program for the economically disadvantaged. This evaluation involved follow-up interviews with hundreds of former program participants.

Awards
and Honors:

Phi Beta Kappa, 1979.
Graduate Office Scholarship, Michigan State University, 1979.

Publications:

Schucker, B., Wittes, J.T., Santanello, N.C., Weber, S.J., McGoldrick, D., Donato, K., Levy, A., and Rifkind, B. Change in Cholesterol Awareness and Action: Results from National Physician and Public Surveys. Archives of Internal Medicine, 151, April 1991, p. 666-673.

JOHN P. VIDMAR

Vice President
Public Sector Research Group
Market Facts, Inc.

Education: Ph.D., Public Policy Analysis, University of Illinois, 1985

M.A., Political Science, University of Chicago, 1976

B.A., Magna Cum Laude, Political Science and Sociology, Cleveland State University, 1974

Areas of
Expertise:

Dr. Vidmar rejoined Market Facts' Public Sector Research Group in 1988 after a seven year hiatus at the Survey Research Laboratory at the University of Illinois. He brings with him fourteen years' experience in survey research, including over five years as a Study Director for Market Facts (1976-1981). Dr. Vidmar has excellent technical skills in virtually all phases of survey research including project design and management, questionnaire design, data processing and statistical analysis of survey data. He has taught and authored professional papers on research methodology, statistics and public policy evaluation, and he has developed particular expertise in the conduct of large-scale surveys focused on public policy matters.

Representative studies Dr. Vidmar has conducted at Market Facts and the University of Illinois Survey Research Laboratory include the following:

Selected
Project
Experience:

Evaluation of the Off-line EBT Demonstration

Dr. Vidmar is the survey operations director for the evaluation of the Dayton, Ohio off-line EBT Demonstration. He is responsible for the collection and processing of all interview data from recipients and retailers and observation data from check-out counters and assistance office intake workers. Interviews with recipients will include telephone and in-person interviews, and retailer interviews will be done in person.

VIDMAR, John P.

Community Interventions for Smoking Cessation

Dr. Vidmar was the survey operations manager for this multi-million dollar quasi-experiment conducted in the Chicago MSA. This multi-survey project was a panel design with various experimental and control groups who were interviewed at six-month intervals for a three year period. In total, over 7,000 respondents were members of the various panels. Respondents were selected through random techniques ranging from simple randomsamples of registrants for smoking cessation programs to RDD surveys of the general population to locate smokers. Most of the follow-up interviews were conducted by telephone using CATI systems but some interviews were conducted face-to-face as well as by self-administered mail questionnaires.

One of the five projects in that program involved monitoring smoking cessation monitoring among low-income Black women living in public housing. Approximately 500 women were interviewed for that project.

All of this work was conducted under an on-going grant from the National Cancer Institute.

Public Housing Resident Surveys

Dr. Vidmar has served as a research consultant to the Metropolitan Planning Council of Chicago in the design and execution of an ongoing series of surveys of residents of public housing projects in the City of Chicago. The subject matter of these surveys has ranged from problems with apartment units, to purchasing behavior concerning groceries, clothes and hardware, to perceptions of economic opportunities. His involvement included the survey and questionnaire design, training of interviewers, supervision of data processing and data analysis and report preparation. A significant feature of these surveys is that they have achieved cooperation rates higher than the typical experience of survey organizations interviewing low-income populations. Typically household cooperation rates have ranged above 80%.

Chicago Metropolitan Area Information Survey

For the Chicago Metropolitan Information Center (MCIC), Dr. Vidmar is currently the Principal Investigator for a large multi-year study to collect information regarding perceptions and activities of respondents in terms of employment, transportation, housing, education, and other key functional areas. The lengthy inter-censal period creates a need for accurate and up-to-date depictions of the objective circumstances of life for area residents.

VIDMAR, John P.

Data will be used in decision making concerning allocation of scarce resources among member organizations. Approximately 2,850 interviews have been conducted using an RDD sampling method supplemented by face-to-face interviewing among non-telephone households.

Rural Health Care Survey

Dr. Vidmar was the operations manager for this survey which was conducted in 48 rural communities in the United States. Funded by the Rural Health Care Administration, this million dollar study was the largest effort mounted by a Federal Agency to conduct survey work in rural, low income, medically deprived areas. In total, over 10,000 interviews were conducted by telephone using RDD sampling of the general population.

Metra Ridership Survey

Market Facts recently completed a large ridership survey for Chicago's transportation authority, Metra. It consisted of over 15,000 questionnaires returned by Metra riders. Questionnaires were distributed by interviewers placed at Metra stations. Dr. Vidmar directed the study, including designing the sample, and over- seeing the field execution and data processing.

Metra Monthly Ticket Purchaser Survey

Dr. Vidmar designed an innovative RDD sample plan to locate representative samples of monthly ticket purchasers on Metra. About 120 monthly ticket purchasers will be identified and then tracked longitudinally for a six month period. The data will be used to evaluate trip rate ticket usage on an individual basis.

Rural Ground Water Pollution Project

Dr. Vidmar managed this project under contract to the U.S. EPA. The study was based upon a national mail survey of farmers to determine the amount of oil that was dumped into the ground by farmers who performed maintenance on their own equipment. Results of the study were used to develop national estimates of ground water pollution due to dumping of oil from farm maintenance. The data were used to create an educational program to make farmers aware of environmental hazards of dumping oil from farm equipment.

VIDMAR, John P.

Perceptions of Environmental Issues

For a private sector client, Market Facts recently completed a study of a south side community on environmental concerns and local waste disposal issues. Dr. Vidmar designed and directed this RDD telephone survey.

Consulting for Chicago Area Organizations

For the Hispanic Institute, Dr. Vidmar served as a consultant for a large survey of Hispanics in the Chicago area. Both telephone and face-to-face interviewing was employed. For Lyons Township High School, Dr. Vidmar consulted on a series of community surveys which were used for evidence in recertification. Dr. Vidmar consulted on the design of the questionnaires, drew the samples, and provided advice on data processing and analysis.

Survey of Welfare Recipients

For the Illinois Department of Welfare, Dr. Vidmar managed a survey of welfare recipients' experiences in receiving emergency care in hospitals in the Chicago area.

Chicago Public School Students Victimization Survey

Under a grant from the Department of Education, Dr. Vidmar was a survey manager for this study involving 45,000 home room interviews with students in the Chicago public schools concerning crime victimization. Dr. Vidmar drew the sample, trained the interviewers, and consulted on data processing and analysis.

No-Till Farming

Dr. Vidmar managed this survey of farmers in the State of Illinois who were engaged in no-till farming. The sampling frame for this project was created by using records from county agricultural agents. All interviewing was conducted by telephone. A follow-up interview was conducted after a year, and at that time a sample of farmers was drawn who had engaged in conventional tilling techniques. These were used as a comparison group for the analysis of efficiency and production. This work was funded through a grant from the Illinois Department of Agriculture.

VIDMAR, John P.

Worldwide CATI Surveys for the Air Force

Under a current contract with the U. S. Air Force, Market Facts has been conducting a series of CATI surveys with Air Force personnel throughout the world. Dr. Vidmar provided senior level supervision on this task order contract and consulted on technical issues in sampling, interviewing, and data processing.

Previous
Experience:

1976-1981 Analyst/Study Director, Market Facts, Public Sector Research Group.

1981-1988 Project Coordinator and Research Data Analyst, Survey Research Laboratory, University of Illinois. In this position, Dr. Vidmar designed, managed and consulted on the execution of all phases of survey research projects focusing on public policy issues. He specialized in conducting large-scale surveys with multiple waves of data collection.

1979-1988 Lecturer, Departments of Political Science and Criminal Justice, University of Illinois. As a lecturer, Dr. Vidmar has taught courses on research methods, statistics, policy evaluation, introduction to political analysis and American Government. He has presented professional papers and chaired conference proceedings on survey research methods.

1985-1988 Consultant, Metropolitan Planning Council of Chicago. Dr. Vidmar advised on the design, execution and analysis of surveys conducted with Chicago Housing Authority housing residents.

1986-1988 Consultant, National Broadcasting Corporation National Elections Unit. In this position, Dr. Vidmar has performed exit poll analysis for national elections -- both primary and general -- for network radio and television. This analysis has included live reporting of results on national radio and internationally on the Armed Service Radio Network.

VIDMAR, John P.

Professional
Papers:

"Data Cleaning" and "Data Analysis Considerations," in **Design and Conduct of Community Sample Surveys: A Manual of Principles and Techniques**. Chicago, Survey Research Laboratory, University of Illinois, 1983.

Methodology Report for Measuring the Effects of System Operating Policies on the Travel Behavior and Desires of Individuals, for the U.S. Department of Transportation. Chicago: Market Facts, Inc., 1977.

"An Examination of the Rotation of Response Categories," (John P. Vidmar and Paul Holtzman). Midwest Association for Public Opinion Research. Chicago, 1978.

"Organizing Your Company's Data for Evaluating Health Systems." **Employers and HMO's: Perspectives, New Relationships and Future Considerations**. Chicago, 1985.

"Sample Yields from Alternative Approaches to Locating Rare Populations," (John Vidmar and Richard Warnecke). International Conference on Telephone Survey Methodology. Charlotte, North Carolina, 1987.

"Evaluating the Impact of Non-Response and Non-Accessibility in Telephone Surveys in the Calculation of Household Smoking Incidence Rates. (John P. Vidmar, Richard Warnecke and Edward Lakner). American Association for Public Opinion Research, 1988.

CLASS IV

JANET HARRIS

Associate Study Director
Public Sector Research Group
Market Facts, Inc.

Education: Master of Public Affairs, Lyndon B. Johnson School of Public Affairs,
University of Texas at Austin

B.S., Political Science, University of Oregon

Areas of
Expertise:

Since joining Market Facts in 1990, Ms. Harris has assisted the design, analysis and management of survey research projects for public and private sector clients.

Ms. Harris was trained in public policy and advanced research methods with a concentration in survey research at the Lyndon B. Johnson School of Public Affairs at the University of Texas at Austin. Prior to joining Market Facts, she was an analyst at Greenberg-Lake: The Analysis Group.

Specific
Project
Experience:

Evaluation of the Off-Line EBT Demonstration

Ms. Harris has worked closely with the prime contractor, Phoenix Technology, Ltd., on an evaluation study of the Off-Line Electronic Benefit Transfer Demonstration for the Food and Nutrition Service of the USDA. The study involves pre and post testing of recipient and retailer experiences and attitudes. In this demonstration food stamp recipients will receive their benefits in the form of electronic accounts stored on smart cards issued instead of coupons. The evaluation identifies the cost and impacts of this new technology on recipients, grocers, financial institutions, and the Food Stamp Program using a demonstration city and a matched control city.

Infant Feeding Study

For the U.S. Food and Drug Administration, Ms. Harris currently supervises the day-to-day operations of a large-scale study of infant feeding practices during the first year of life. A small group of women have already been recruited for a pilot test, the results of which Ms. Harris will use to modify the final survey instruments. To aid the FDA in its understanding of infant feeding plans, practices and behaviors, a panel of pregnant women will be recruited from Market Facts' Consumer Mail Panel. Respondents will be given a prenatal survey and monthly surveys during their baby's first year.

USPS National Tracking Study, 1990

For the U.S. Postal Service, Ms. Harris has been involved with a bi-annual nationwide tracking study measuring general attitudes toward the USPS as well as supplemental areas of interest regarding USPS services. This study is conducted on a quick turnaround basis. In the most recent wave of the study, Market Facts conducted 1,008 face-to-face interviews during October, 1990. Ms. Harris wrote 10 of the 13 reports delivered to the USPS as a result of this study.

Recreational Boating Fuel Use Study

For the U.S. Fish and Wildlife Service and the U.S. Coast Guard, Ms. Harris oversees the daily operations of a large nationwide study of fuel usage of recreational boaters. Using both registration lists provided by states for a mail panel and random-digit-dial for telephone interviews, Market Facts is estimating the amount of fuel used by hundreds of thousands of recreational boaters during the course of a year. The results will be used by the agency to allocate fuel tax dollars appropriately.

Maryland Lottery Behavior Tracking Study

For Trahan, Burden & Charles Advertising and the Maryland Lottery, Ms. Harris has developed the questionnaire for a study of Maryland adults who play the lottery. The objectives of the project are to learn how many play (penetration), who plays (demographics), what games and combinations are played (cross-play), how often they are played, and how much is spent. The survey relied on random-digit-dial samples of lottery players and non-lottery players in Maryland.

**Electronic Strategies
Associates Resumes**

CLASS I

PAUL F. P. COENEN

Paul F. P. Coenen is currently the President of Electronic Strategy Associates, an Electronic Funds Transfer (EFT) consulting firm whose international client list contains some of the most innovative and aggressive EFT offerers, software providers, and equipment manufacturers. Electronic Strategy Associates specializes in all phases of electronic funds transfer: Automated Teller Machines (ATMs); Point of Sale (POS); Automated Clearing House (ACH); credit cards; debit cards; Electronic Data Interchange; Electronic Benefit Transfer; EFT strategy; market entry; new product development; competitive analysis; business plans; as well as other related fields. One of the most creative and "hands-on" managers and doers in EFT, Mr. Coenen and Electronic Strategy Associates have established themselves as top professionals in the development of new products and applications in EFT and have been in the forefront of U.S. payment systems evolution over the last ten years.

A respected thinker and frequent speaker on EFT, Mr. Coenen has authored over twenty articles on EFT that have appeared in such publications as The American Banker, Bank Systems and Equipment, U.S. Banker, Credit Union Management, ABA Banking Journal, and The Southern Banker. Mr. Coenen has also been cited in such publications as The Wall Street Journal, Computers in Banking, USA Today, Newsweek, Bank Network News, POS News, The Nilson Report, and Funds Transfer Report. Mr. Coenen has been a speaker in many major EFT conferences including those of ANSI, ABA, BAI, PSI, EMC, EFTA, and the Interfinancial Association. Mr. Coenen has been a member of several American National Standards Institute (ANSI) committees and working groups and was nominated for the EFT Hall of Fame.

TYPICAL ELECTRONIC STRATEGY ASSOCIATES' CONSULTING ASSIGNMENTS
As President, Mr. Coenen was the lead person in all ESA efforts.

Working under contract with NYNEX, the northeastern Regional Bell Operating Company, ESA interacted directly with The Port Authority of New York & New Jersey in the design, development, and implementation of a program to accept credit cards for parking fees at the major New York/New Jersey airports. After supporting NYNEX during the successful bidding cycle, ESA provided design assistance for the project, worked closely with MasterCard and VISA to develop specific rules for the project, and aided with the RFP writing and development and Acquirer recruitment. In addition to the credit card handling, ESA completed a study with recommendations for devices to handle nearly \$18,000,000 per year in currency and reviewed and recommended the initial locations for and marketing of pre-cashiering devices in the airports. The results of the studies were expected to save thousands of dollars in time and effort for currency handling and to contribute to the success of the parking project.

The parking project was hailed as 'innovative' and 'pioneering' by the trade press and received immediate requests for participation from other credit, debit and T&E card issuers. More importantly, key personnel at The Port Authority described ESA participation as "...critical to the success of the project."

United States Department of Agriculture, Food and Nutrition Service: ESA played a key role in the development of the use of electronic techniques for the delivery of food stamps, welfare, and other social benefits (Electronic Benefit Transfer). The role included participation in the evaluation and Experts Panel for the first EBT demonstration (Reading, Pennsylvania), staffing of the extension of that demonstration, providing advice and counsel for the Ramsey County (Minnesota) EBT project and working with the financial institution directly involved, and providing a major consulting study on the use of technologies and techniques for EBT. ESA's role continued with consultation to EBT providers, service vendors, and State and Federal Agencies.

Diebold, Incorporated: ESA wrote and produced the entire presentation for the largest bank in the country to celebrate their 1,000th ATM placement. The presentation included models for the successful placements of ATMs, participation in shared ATM networks, and the development and deployment of Point of Sale with associated economic models.

Schlumberger: ESA wrote and produced a sales and marketing brochure for the use of Smart Cards. The brochure contained an explanation of concept, the role of the cards, and a preliminary discussion of Smart Card economics for Schlumberger's application. ESA also coached Schlumberger personnel for

successful marketing and developed a complete demonstration of the Smart Card solution for a critical buyers conference.

Money Station of Ohio: ESA performed a complete audit of the network's Point of Sale program. The audit included marketing, system documentation, technology application, and service presentation. The effort covered the audit with suggestions for improvements and uncovered, and pointed the way to a solution for, an unrelated major difficulty which had been troubling the network.

BUYPASS The System, Incorporated: As consultants and contract employees, ESA was integral to the conceptualization, development, and marketing of BUYPASS, the first national, debit/credit, paperless data capture POS system. The quality of BUYPASS provided a benchmark for subsequent POS offerers such as VISA and MasterCard. BUYPASS supported several varieties of POS terminals and took advantage of both dial-up and dedicated communications technology. The theoretical design, data capture aspects and the system Operating Rules, all Mr. Coenen's responsibilities, were viewed as major innovations in EFT and POS.

Among Mr. Coenen's responsibilities were the development of all EFT aspects for the BUYPASS product, recruitment and management of the key technical staff and the development of all financial institution marketing materials and personnel. Financial marketing recruited such quality participants as Southeast Bank, First City, and Citicorp Choice. Mr. Coenen acted as Senior Vice President of the organization and was part of the Senior Management Staff.

GTE: ESA, on multiple assignments, served as an initial resource to GTE for them to enter the field of EFT. ESA presented introductory seminars as to the market, its potential, and possible competitors, and assisted in the development of a Board of Directors presentation on the market, opportunities, and method of market entry.

Carpet and Rug Institute/Retail Floorcovering Association: ESA provided consulting, program development assistance, and vendor selection for FLEX, which will be one of the largest affinity credit card programs. The program, developed for the floorcovering industry, will offer instant credit, data capture, and product sales information for up to 23,000 floorcovering merchant locations nationwide.

Fujitsu Systems of America: ESA provided a complete and critical review of Fujitsu's internal analysis and plans for EFT products. The review resulted in the selection of a direction that both saved Fujitsu considerable time, effort, and money and suggested a beneficial course of action for the Company.

Before Electronic Strategy Associates, Mr. Coenen was the first Executive Vice President of PULSE, currently the largest regional shared EFT network in the United States. Under Mr. Coenen's management, PULSE grew from initiation to become the largest network in the country in less than one year. Mr. Coenen and PULSE were successful in surpassing all other networks and becoming the unifying force in the Texas EFT market.

Mr. Coenen's involvement with PULSE began well before the formation of Financial Interchange, PULSE's management entity; he served as a consultant and information resource to several of the founding banks on topics such as funding, pricing, organizational structure and operations. The PULSE network model proved so successful that it became the prototype for many other statewide, regional, and national networks including STAR, AVAIL, HONOR, CIRBUS, PLUS and others. In all of these networks, Mr. Coenen has provided either direct input as a consultant to the management entity or has acted as a resource or consultant to founding members or participants.

Prior to Pulse, Mr. Coenen was the Executive Director, a Member of the Board of Directors, Chairman of the Systems/Steering Committee and was the developer of the marketing program for Tyme is Money. Tyme was the first statewide and then multi-state EFT network. Tyme supported both ATM and POS devices and was the first EFT network to be profitable from year one. While being profitable, TYME also fully repaid its founding banks over \$600,000 within two and one half years. Mr. Coenen managed the TYME Corporation, coordinated all of the Operating Committees, and negotiated all outside contracts.

Mr. Coenen was directly responsible for the agreement between TYME and A.O. Smith Corporation (now Deluxe Data) that brought the TYME/Smith EFT software to market. That arrangement produced a situation in which TYME/Smith software drove more ATMs and EFT networks than any other in the United States.

Even though TYME Corporation was structured as a non-stock, not-for-profit entity, Mr. Coenen's effort accrued well over \$1,000,000 in direct and indirect profits to the network. Mr. Coenen also assisted in the operational refinements of the pioneering legal package that now is the basis for many EFT networks and provided assistance during the drafting of Regulation E, the consumer protection statute. Under Mr. Coenen's management, the TYME network received recognition as the first successful EFT network in the United States.

Prior to entering the EFT field, Mr. Coenen held significant management positions. As a RAND consultant, Mr. Coenen was Information Services Supervisor for computer operations, data entry, and records security for the largest social science experiment in U.S. history. Mr. Coenen also provided

experimental data integrity and assisted with the development of the organizational structure that managed the project. Mr. Coenen also managed an insurance processing corporation and a real estate mass appraisal and consulting firm. Mr. Coenen also consulted with a "Big 8" firm and worked in the Community Development Department of Newport Beach, California.

Mr. Coenen received his B.S. Degree from St. Norbert College, M.S. Degree from San Diego State University, and completed his Ph.D. degree to candidacy at the University of California-Irvine.

CHRONOLOGY

● Electronic Strategy Associates, Inc.	10/82 - Present
● PULSE (Financial Interchange, Inc.)	8/81 - 10/82
● TYME Corporation	10/77 - 8/81
● W.P. Ferris, Inc.	12/76 - 6/77
● Heritage Computer Corporation	12/74 - 11/76
● RAND Corporation (Housing Allowance Office)	11/73 - 12/74

PUBLICATIONS: ARTICLES BY OR ABOUT PAUL F. P. COENEN

- Retail EFT in the Next Three Years. Bank Administration Institute material for the Retail Delivery Systems Conference (ATM/10). December 1, 1987.
- Trends in Electronic Banking Technology. Banking Software review. Summer, 1987. Page 19
- Electronic Developments Present Ongoing EFT Challenges. Bank Systems and Equipment. August, 1986. Page 104.
- Non-Financial Uses of EFT. United States Banker. February, 1986. Pages 76-78.
- Tech Advisory Line. Bank Systems and Equipment monthly question/answer panel. Began October, 1985. Page 34.
- EFT Consulting. Funds Transfer Report. April 29, 1985. Pages 7-8.
- The POS Mix - and Choice - is a Rich One. United States Banker. November, 1984 Pages 46-49
- The Ultimate Electronic Network Debuts Nationwide. Marketing Trends. November/December, 1983. Pages 4-9.
- The EFT Picture: Color It Electric. Credit Union Management. September, 1983. Pages 48-50
- The Electronic Battlefield. Credit Union Management. September, 1983. Pages 93-95.
- Cooperation Among Competitors Keeps PULSE in #1 Network Slot. Bank Systems and Equipment. February, 1983. Pages 93-95.
- Obstacles Lie in the Way of Marketing Networks. American Banker. December, 1982. Pages 13-15.
- Perspectives on EFT Networks. A Time of Testing. The Southern Banker. October, 1982. Pages 42-48.
- Texas ATM Networks Import Top Executives. Transition. October, 1981 Pages 13-15.
- Network Switch Can Ease Interchange's Legal, Operational Hassles. Bank Systems and Equipment. April, 1980. Pages 68-70.
- EFT Marketing. Credit Union Management. February, 1980. Pages 34-36.

Publications continued

- "Tyme is Money": That's What Access To a State-wide EFT Network Means For Wisconsin Credit Union Members. Credit Union Management. September, 1979. Pages 5-8.
- Four Banks Put Tyme On the Map. ABA Banking Journal. May, 40-42.
- Get Set For New Standards. Bank Systems and Equipment. February, 1979. Pages 69-70.
- "Back Room" Concept Adds to Success of Wisconsin EFT System. Midwestern Banker. August, 1978. Pages 10-12-26-50.
- Carcinoid Tumors. Physicians Continuing Education Program. Chapman General Hospital. Orange, California. July, 1973.
- Delirium. Physicians Continuing Education Program. Chapman General Hospital. Orange, California. July, 1973.
- An Investigation of Some Important Managerial Variables in a Large Banking Institution: A Comparison. Experimental Publication System. 1970, 8, MS #308-1. Pages 1-10.

DONAL D. SEMLER

General Professional Qualifications

WORK HISTORY

President - Public Technologies, Inc. PTI is focused on providing enhanced payment system capabilities to retail and government sectors. PTI has performed work for the State of Minnesota in the area of smart cards, biometric identification, and interactive touch screen video, and is currently working with financial institutions, retailers, and their related associations to reduce the bad check losses of the retail community.

President - Semler Management Services, Inc. SMS provides management consulting services relative to electronic delivery and information systems. Major project experience relates to debit card programs and government electronic benefit systems. Emphasis has been on the integration of the financial, marketing, and operational strategies, in addition to the development and implementation of the systems themselves.

President - Semler Management Associates. SMA provided strategic and business planning consulting services for small to medium sized businesses with an emphasis on methods to increase profitability.

Vice President - Corporate Development - Norwest Computer Services. Responsible for business strategy relative to the use of technology in supporting the Corporation's long range plans.

Vice President - Systems Division - Norwest Computer Services. Responsible for managing the development and maintenance of all application software used by Norwest Corporation. Over one hundred technical employees in the Division, three levels of management, and several hundred active projects.

Vice President - Planning Division - Norwest Computer Services. Responsible for developing and coordinating the information systems strategy for the Corporation to ensure that the Corporation's business plan could and would be supported technologically.

IBM Advisory Systems Engineer and Staff Instructor. Responsible for the design and implementation of computer systems used in large financial institutions. Developed and taught data processing curriculum for IBM employees and customers, from entry level courses through advanced technical design.

Lieutenant - U.S. Army Air Defense Artillery. Executive Officer of missile site responsible for managing the administration and operational readiness of the command.

Marketing Representative - Procter and Gamble. Responsible for working with supermarket chains and independent retailers to facilitate the promotion of company's products, and to increase sales.

EDUCATION

BA - Marketing and Retailing - Michigan State University.

Advanced Finance Industry School - IBM.

Graduate School of Banking - IBM.

Executive Management Program - Penn. State University.

Numerous technical and managerial classes while with IBM and Norwest.

SIGNIFICANT ACCOMPLISHMENTS

Graduated in top 5% of high school, and top 25% of college class.

President of Theta Chi Fraternity, Michigan State University.

Developed complete disk support for IBM's Compatibility Operating System, allowing IBM 1440 users to utilize their existing software on System 360 hardware utilizing IBM's new operating systems. Software was used internationally to facilitate migration to the System 360.

Developed new file structuring and accessing techniques for high performance applications, and instructed classes on these methods.

Designed and installed communication based systems for large financial institutions.

Awarded the IBM Regional Manager's Systems Engineer Performance Award.

Developed and taught project management and software estimating techniques to IBM Systems Engineers.

Assisted a major bank in implementing the BankAmericard (VISA) program in the Twin Cities in a shorter period of time than it had ever been previously installed.

Functioned as IBM's liaison to a large multi-bank holding company to plan and implement the centralization and standardization of data processing systems and operations over a multi-state area.

Developed and implemented an Information System Planning Process to coordinate the efforts among technical areas, and between the technical areas and corporate office.

Developed a Competitive Data Manual and competitive analysis process to monitor and measure progress against competition, and provide a central source of competitive information for the corporation's personnel.

Managed the staff which implemented Norwest's interface to the Iowa Transfer Switch (ITS) and the Nebraska Transfer Switch (NETS). Norwest was the first entity to successfully complete the testing and certification requirements for admission to the switches.

Managed the implementation of Norwest's on-line ATM system.

Member of design team that developed and implemented the design of Norwest's operational environment which has allowed Norwest to successfully process very large workloads with minimal human involvement. The system has been studied and replicated by large national and international organizations.

Managed a large POS pilot designed to determine the benefits to the merchant and retail customer in utilizing POS capabilities.

Member of a senior management corporate task force to assess the financial industry's requirements on a ten year basis. Responsible for assessing how information system technology would impact the banking business.

Managed an effort to install and evaluate an unannounced IBM product, and its associated impact on the corporation. Responsible for evaluating the combined financial, technical, and operational impact.

Developed and taught strategic planning to financial institutions for Bank Administration Institute.

Invited as a guest lecturer by IBM to present managerial implications of a new IBM product to an IBM Banking Executive Class.

Provided a managerial update on microcomputer technology for bankers at two annual Minnesota Bankers Association annual meetings.

Designed and managed the development of numerous micro-based applications for financial institutions.

Selected by the Minnesota Bankers Association to instruct courses on data processing and electronic banking at their Bank Operations School.

Directed a major project utilizing leading edge technology, including interactive video, smart cards, and biometrics. Major responsibilities included overall project planning and management, technology analysis and selection, financial projections, and vendor coordination.

Directed a large Point of Sale project for a major regional banking organization. Activities included competitive assessment, major retailer coordination, development of financial plans and pro formas, marketing strategy, coordination with existing corporate strategies, vendor evaluation and selection, and management of the service implementation.

Developed alternative delivery strategies for electronic benefit systems when current projects were jeopardized by renegotiation with third party contractors.

Frequent speaker on subjects relating to technology and the financial industry, and author of a number of articles published in regional and national publications.

REFERENCES

Mr. Tom Fashingbauer
Commissioner
Ramsey County Human Services
American Center Building
St. Paul, MN 55101
612/298-4613

Mr. Joel Hoiland
Executive Director
Minnesota Grocers Association
533 St. Claire Ave.
St. Paul, MN 55102
612/228-0973

Ms. Carol Lenhart
Director of Treasury Services
Super Valu Stores, Inc.
11840 Valley View Road
Eden Prairie, MN 55440
612/828-4141

Mr. Clif Hammond
Vice President
CVE Corporation
81st and Maple
Omaha, NE 68134
402/397-5083

**Burger, Carroll
Associates Resumes**

CLASS I

ROBERT H. STEARNS**Senior Corporate Management**

Mr. Stearns' experience with microcomputer and mainframe applications extends over thirty years. His expertise ranges from programming and systems management and analysis to policy development and implementation. His knowledge covers many computer applications and systems with a specialty in social and human services such as welfare, WIC, Medicaid, and manpower and training programs. He has directed the design and implementation of computer systems for many different Federal and State agencies.

Relevant Experience

Consultant to Franklin C. Fetter Community Health Center, Charleston, SC to upgrade and improve the center's comprehensive, computerized Public Health information system.

Consultant to Quality Planning Corporation on the project to Develop a system concept and a pilot project design for the Louisiana WIC Program and the parent Office of Preventative and Public Health services.

Consultant to Analytic Systems Incorporated to develop a WIC information system self-evaluation guide and review program management.

Manager of Data Processing for the State of South Carolina Department of Social Services. During this time the department installed a Medical Management Information System (MMIS), installed a statewide network of terminals for welfare local agency use, and implemented a department-wide automated accounting system.

Founder of the South Carolina State Data Processing Manager's Association to foster greater efficiency in the handling of state data bases.

Project Director on the Analytic Systems, Incorporated contract to assist the state of West Virginia in the development of a Social Services Information System as part of the overall project to measure the effectiveness of social services.

Project Director to create and implement an automated information system for the state of West Virginia's WIN program.

Consultant to Systems Development Corporation to market automated medical claims processing (MMIS) to state agencies.

Project Director to develop manuals and conduct training for many of the Department of Labor's manpower programs; CEP, OIC, WIN.

Project Director for System Development Corporation's contract to manage the Job Corps automated information system.

Statistical programmer on several Job Corps success rate studies.

Robert H. Stearns, continued

Previous Employment

President, PM3 Software, Inc. 1989 to present

President, RHS Associates. 1981 to present

Manager, Data Processing, South Carolina Department of Social Services, 1978 to 1981

Vice President, Analytic Systems Incorporated, Vienna, Va., 1969 to 1978.

Program Manager, Rand Corporation and System Development Corporation, 1956 to 1969.

Education

B.S., Rensselaer Polytechnic Institute, Troy, NY, 1956

Additional Information

References, upon request.

ARTHUR W. BURGER**Senior Corporate Management**

Arthur W. Burger, M.A., is a management and organization development consultant with ten years of WIC Program and other public sector experience at the Federal, state and local level. Mr. Burger is a specialist in organizational process, quality assurance, information systems and training.

Mr. Burger is a partner in Burger, Carroll Associates (BCA), of Santa Fe, New Mexico, a management and training services firm. In addition to his work at BCA, Mr. Burger is a registered consultant with the U.S. Office of Personnel Management's Organization Development Services Network, and is a member of the adjunct faculty in the Information Systems Management Program at the University of San Francisco, California.

SELECTED PROFESSIONAL ACCOMPLISHMENTS**INFORMATION SYSTEMS**

The following material identifies a selection of technical consultancies involving information system evaluation, design, development and implementation. Additional information on these engagements is available upon request.

Project Director for design of statewide WIC information system network, development of procurement documents, and on-going quality assurance assistance, West Virginia Department of Health, 1991-Current

Project Director for design of statewide integrated public health information system network and development of procurement documents, Oklahoma Department of Health, 1991-Current

Methodology Task Leader for design of a WIC food price collection and variable maximum value food instrument redemption system, New York Department of Health, 1991-Current

Project Director for development of WIC on-line information system, local agency policy and procedure document, Michigan Department of Public Health, 1991-Current

Consultant for preparation of information system procurement document and on-going quality assurance assistance, Maine Department of Human Services, 1989

Subcontract Director for design, implementation and training for a statewide information network, Michigan Department of Public Health, 1987-89

Consultant for alternative data capture technologies, Alabama Department of Public Health, 1988

Subcontract Director for system implementation and training support services, Washington Department of Health and Social Services, 1987

Arthur W. Burger, continued

Project Director for design of multi-program, integrated statewide information network, Louisiana Department of Health and Human Resources, 1986-87

Consultant for information systems alternatives and feasibility assessment, New Jersey Department of Health, 1985

Project Director for development of a simplified methodology for user evaluation of information system performance in State Agencies participating in the WIC Program, USDA, 1983-85

Consultant for evaluation of data system facilities maintenance contractor services, Maine Department of Human Services, 1986

Consultant for information system requirements definition and feasibility assessment, Massachusetts Department of Public Health, 1985-86

Consultant for requirements specification and general design of statewide information network, Maryland Department of Health and Mental Hygiene, 1985

QUALITY ASSURANCE

The following material identifies a selection of quality assurance engagements. Additional information on these efforts is available upon request.

Consultant for the design of a provider compliance promotion and enforcement system, Iowa Department of Health, 1989

Project Director for the evaluation of WIC provider quality control, Michigan Department of Public Health, 1988

Consultant for the evaluation of provider quality control strategies, Oklahoma WIC Program, 1988

Project Director for national survey of income eligibility verification process in the WIC Program, USDA, Food and Nutrition Service 1986-1988

Project Director for the development of a national system for compliance monitoring in the Food Stamp Program's retail store distribution system, USDA, Food and Nutrition Service, 1985-87

Consultant for design of a provider compliance promotion and enforcement system, Ohio Department of Health, 1984-85

Subcontract Director for evaluation and technical assistance to state-initiated productivity and quality control initiatives in the Food Stamp Program, 1984-85

Consultant for the evaluation of provider quality control, Connecticut Department of Health, 1984

Arthur W. Burger, continued

Consultant for design of a provider compliance promotion and enforcement system, Tennessee Department of Public Health, 1983-84

Project Director for national study of provider compliance promotion and enforcement in the WIC program, USDA, 1979-81

Project Analyst for evaluation of all existing national corrections standards, US-DOJ, Law Enforcement Assistance Administration 1979

ORGANIZATIONAL PROCESS

The following material identifies various engagements generally related to organizational process. Additional information on the nature of these efforts is available upon request.

Consultant for the development of client agency policies and procedures, Michigan Department of Management and Budget, 1989

Development Consultant for the design of experimental maternal and child nutrition program, National Institute of Nutrition, Federal Republic of Mexico, 1988

Project Manager for a national survey of participants and providers in the Temporary Emergency Food Assistance Program (TEFAP) for a Special Report to Congress, USDA, 1986-87

Senior Consultant on a project to assess coordination between the Maternal and Child Health Program and the WIC Program, US-DHHS, Office of Assistant Secretary, 1986

Consultant for evaluation of the WIC Program; implementation of enhanced delivery system; and, development of CSFP grant application, Maryland Department of Health and Mental Hygiene, 1984-85

Contributing Analyst for study of President Reagan's regulatory reform program, National Science Foundation, 1983

Founding Director of a national research and education consortium for the study and reporting of Federal regulatory actions effecting community-based organizations, with current annual endowment of a quarter million dollars, Focus Project Inc., 1982-83

Project Analyst for assessment of the societal costs of adolescent pregnancy and parenting, National Institute of Child Health and Human Development, 1980

Project Director for development of a micro-simulation decision support model of treatment resource allocation strategies, National Institute on Alcohol Abuse and Alcoholism, 1979

Research Associate for study of the cost to local government in complying with federal laws and regulations, National Science Foundation, 1978

Arthur W. Burger, continued

TRAINING

The following material describes original training seminars to illustrate expertise and accomplishments. Additional information on training and education experience is available upon request.

SYSQUICK - Information System Lifecycle Management

Creator of three day training seminar for Federal, state and local program managers employing a gameboard based simulation exercise, a workbook and lectures to convey the non-technical manager's role in overseeing information systems (Copyright 1988)

M-TRACX EXPRESS - Implementation of Data System Network

Senior Designer and Master Trainer for a two day training program employing a team-based simulation exercise and lectures to train state and local staff in the use, security and maintenance of a statewide information system network; commissioned by the Michigan Department of Public Health, 1989

PERFORM - Efficiency and Integrity in WIC Operations

Senior Designer and Master Trainer for a five day national training conference for Federal and state managers employing team-based simulation exercise and lectures to explore structural, technical, and behavioral interventions for enhancing program operations; commissioned by USDA Food and Nutrition Service, October 1987

SIS-GUIDE - "Simplified Information System Evaluation Guidance"

Senior Designer and Master Trainer for a one day training seminar for Federal and state managers employing a step-wise methodology, a team-based simulation exercise, and lectures to convey the principles of user evaluation of data systems in the WIC Program; commissioned by USDA Food and Nutrition Service and presented in seven locations throughout the country, 1985

QUICK - "Quality Undertakings Intended to Cure Kraziness"

Creator of a three day motivational seminar for public health clinic staff and supervisors, employing team-based simulation exercise, personal values assessment, and discussions to initiate an on-going assessment of self esteem, quality and efficiency (Copyright 1984)

AFASGAM - "Analysis of Fraud and Abuse Simulation Game"

Creator of a three day training seminar for Federal and state managers employing team-based simulation exercise, lectures and discussion forums to apply the principles of industrial quality control to the promotion and enforcement of compliance by retail grocers providing services to the WIC Program (All rights purchased by USDA Food and Nutrition Service, 1984)

Arthur W. Burger, continued

Previous Employment

Partner, Burger, Carroll Associates, Santa Fe, NM 1988-present

Vice President, Quality Planning Corporation, Oakland, CA 1986-88

Project Director, Analytic Systems Inc., Oakton, VA, 1983-86

Founding Director, Focus Project Inc., Washington, DC, 1982-83

Vice President, Analogs Inc., Washington, DC, 1978-82

Research Associate, University of California, Riverside, 1977-78

Lecturer, Curriculum Consultant, Health Administration, UC Riverside, 1976-78.

Director of Debate and Forensics, UC Riverside, CA, 1975-78.

District Manager/Consultant, American Business Services Corporation, Newport Beach, CA, 1972-74

Education

M.A., Judicial Politics, University of California, Riverside, CA, 1978. Fields: public administration; research methods

B.A., Political Science, UC Riverside, CA, 1976

Additional Information

References, publication list, reprints, and other information available upon request.

JULIE M. CARROLL**Senior Technical Analyst**

Ms. Carroll is a nutritional epidemiologist with ten years of experience in public health program operations, management and evaluation. In addition, Ms. Carroll is a Doctoral candidate at the School of Public Health, University of California at Berkeley.

SELECTED PROFESSIONAL ACCOMPLISHMENTS**RESEARCH and PROGRAM DEVELOPMENT**

Developed and implemented a prenatal surveillance system on a statewide basis. Designed and evaluated an intervention to improve the duration of breastfeeding in a low income, high risk population. Evaluated the hematocrit values of WIC participants for a three year period to measure impact of intervention.

CLINIC and COMMUNITY SERVICES

Provided individual patient counseling and group education. Developed and presented professional training programs in a variety of subjects. Conducted adult health education through home visits with low income families. Provided technical supervision and training to native nutrition aides on the White Mountain Apache Indian Reservation. Assisted with Arizona's participation in a five state mail survey on the use of food supplements.

STATE WIC PROGRAM DIRECTOR, New Mexico WIC Program.

USDA/FNS Administrator's Citation to the New Mexico WIC Program for Outstanding Service delivery, 1988

Managed and balanced \$13 million program budget (\$3 million administrative and \$10 million food). Supervised 85 State and local agency clinic and professional staff.

Negotiated and managed professional service contracts with six private community health centers and a private banking institution. Increased caseload 32 percent in three years while maintaining targeting of services to high risk populations.

Directed the development and implementation of performance standards and criteria for evaluating direct service staff. Directed the evaluation and redesign of data system and initiated new system development project.

Established staff-client ratios and performance standards for contract agencies. Orchestrated the development of a nutrition education curriculum. Directed major revision of local agency Management Evaluation protocols.

Julie M. Carroll, continued

Relevant Experience

Partner, Burger, Carroll Associates (BCA), of Santa Fe, New Mexico. Burger, Carroll Associates is a health oriented management, training and research firm. (1989-present)

Graduate Instructor, University of California, Berkeley; "Nutrition Policy" course. (1990)

Co-Instructor, University of San Francisco (Undergraduate) "Research Methods and Statistics" in the Information Systems Management (ISM) program. (1990)

Phone Interviewer, National Heart, Lung and Blood Institute & the University of California at Berkeley; "National Growth and Health Study". (1989-90)

Author, Creative Infomatics Inc.; BREASTFEEDING: A Problem Solving Manual, Saunders, Carroll & Johnson. (1987)

State Program Director, Special Supplemental Food Program for Women, Infants and Children (WIC); New Mexico Health and Environment Department, Public Health Division. (1984-88)

Local Agency Director, WIC Program; Health District I, New Mexico Health and Environment Department. (1981-84)

WIC Nutritionist, White Mountain Apache Tribe, White River, Arizona. (1980-81)

Research Assistant, University of Arizona, Department of Human Nutrition and Dietetics. (1980)

Nutrition Aide, Expanded Food and Nutrition Education Program (EFNEP); Coconino County, Arizona. (1977-80)

Publications

Saunders, S., Carroll, J., and Johnson, C., BREASTFEEDING: A Problem-Solving Manual, Creative Infomatics Inc., Durant, Oklahoma 1987.

Saunders, S., Carroll, J., "Post-Partum Breastfeeding Support: Impact on Duration" in Journal of the American Dietetics Association, 88:213, 1988

Carroll, J., Post-Partum Breastfeeding Support, Panel Presentation, American Public Health Association Annual Meeting, Washington, D.C., 1986

Julie M. Carroll, continued

Education (excluding continuing education)

Graduate Student, University of California at Berkeley, School of Public Health; 1988-1990

Master of Science, University of Arizona; Tucson, Arizona, May, 1981

Bachelor of Science, Northern Arizona University; Flagstaff, Arizona, 1980

Professional Associations

Member, American Public Health Association

Member, Society for Nutrition Education

Past Member, New Mexico Community Nutrition Council (Served as Vice President 1984)

Additional Information

References, publication list, reprints, and other information available upon request.

STEPHEN STOLLMACK, Ph.D.

Senior Research Analyst

Relevant Experience

Adjunct Professor of Statistics and Operations Research, Virginia Polytechnic Institute (Current)

Consultant, JWK International, Inc. Annandale, VA. Interactive Forecasting model to predict medical school enrollments. Formulating approach for evaluating the costs and effectiveness of various alternative approaches to training USAF pilots for low altitude missions. (1989-Present)

Consultant, National Cancer Institute, NIH. Evaluated the degree to which seven of NCI's databases and scientific publications were achieving reasonable penetration rates, impacts, and user satisfaction levels. (1989-90)

Consultant, Allen Division, CAE-Link Corp., Alexandria, VA. Developing human reliability growth models for predicting the improvement in soldier performance with newly developing weapon systems attributable to the development of the optimal training program for the new system (in terms of devices, durations, and environments). (1990-Present)

Consultant, Nancy Low Associates, Inc. Analyzed nine separate surveys administered to cancer researchers and physicians to determine their awareness and use of and their satisfaction with the databases, journals, and bibliographic publications produced by the National Cancer Institute. (1988-/89)

Consultant, Synergy, Inc. Evaluated models that measure the relative cost effectiveness of proposed modifications to USAF aircraft systems based on their effect on reliability, maintainability, and/or combat performance. Developed model for the probability of being out of stock of parts required to fix a failed subsystem for tactical air simulations. Used TIMELINE to model the availability of pipelines, ships, and trucks for delivering petroleum to support troop movements in undeveloped theatre operations. (1987-Present)

Consultant, Caliber Associates, Inc. Developed LOTUS-based C/B model of DOD Family Advocacy programs. Developed LOTUS-based breakeven model for balancing the expected costs of alcohol-treatment and possible recidivism with those of separation and replacement. (1987-88)

Consultant, Allen Division, Singer, Inc. Evaluated the DX164 trainer for the TOW 2 missile in terms of its ballistic similitude and its intrinsic value as a training device. (1987-88)

Consultant, JWK, Inc., Falls Church, VA. Designed and developed SIMSCRIPT simulation of the U.S. Army's recruitment program that outputs the ethnic composition and the ESL capabilities that would result from various Hispanic recruitment and training policies. (1984)

Stephen Stollmack, continued

Senior Analyst, Science Applications International, McLean, VA. Assessed system reliability; developed operations procedures to maximize system availability; and designed quality control system for the FBI's new semi-automated conveyor-driven finger-print processing system. Evaluated Department of Energy's procedures to protect the confidentiality of firms that contribute sales data to their monthly publications. (1984-87)

Senior Analyst, Applied Management Sciences, Silver Spring, MD. Developed approaches for minimizing default rates and increasing collections of student loans. Evaluated State efforts to reduce errors in their Food Stamp Programs. Developed a linear programming model which optimized the distribution of personnel resources across IRS' enforcement divisions. (1983-84)

President, Analogs, Inc. Developed methodology to evaluate Medicare reimbursement for alcohol treatment to providers in freestanding settings. Developed statistical methods for detecting fraud and abuse in the WIC Program. Evaluated efforts by State correctional systems to meet physical, health, safety, and management standards. (1978-83)

Vice President, Maximus, Inc. Developed projections of the need for Neurologists for the President's Commission on Epilepsy. Developed methodology for estimating alcoholism prevalence. Developed Child and Maternal Health program evaluation system. (1976-78)

Special Assistant, U.S. Department of Health, Education and Welfare. As Special Assistant to the Director of Research and Demonstrations coordinated research and demonstration projects in Medicaid, Income Maintenance, and Social Services. (1973-75)

Research Director, D.C. Department of Corrections. Developed prison population models adapted by the Department and later by the Council of State Governments. Developed new methods for evaluating rehabilitation programs based on recidivism data. (1971-73)

Research Associate, The Ohio State University. Developed simulation models for Lake Erie's Western Basin Ecosystem. Developed models for the first fully computerized tack-anti-tack combat simulation to be used for evaluating the cost effectiveness of design concepts. (1963-70)

Methodological Focus

Forecasting, Prevalence Estimation, Cost-Benefit, and Resource Allocation and Decision Models; Statistics and Experiment Design; Reliability/Maintainability

Stephen Stollmack, continued

Models Developed

Criminal Prevalence Estimation (National Institute of Justice)

Prison Population Forecasts (Council of State Governments)

Medical School Enrollment Forecast (Bureau of Health Professionals, U.S. DHHS)

Alcoholism Prevalence (National Institute on Alcoholism and Alcohol Abuse)

Vendor Fraud Detection (Supplemental Food Program, FNS, USDA)

Rehabilitation Program Evaluating Model (D.C. Department of Corrections)

Fraud Loss Estimation (WIC Supplemental Food Programs)

C/B of In-Patient Alcoholism Treatment (U.S. Navy)

Personnel Resource Allocation Model (IRS)

Source Confidentiality Protection (Petroleum Marketing Division, DOE)

Training Program Impact on Racial Composition of Force Structure (U.S. Army)

Teaching and Lecturing

George Washington University; Lecturer, Summary Course in Operations Research (1973-74)

High School Mathematics Teacher, Cardoza High, Washington D.C. (1970-71)

University of Michigan Special Summer Programs: Lecturer in Military Operations Research (1963-66)

LINDA A. YATES**Senior Technical Analyst**

Ms. Yates is a management consultant with many years of experience as an employee of the Department of Agriculture, Food and Nutrition Service. Her background covers many areas, including WIC vendor management, interagency agreement negotiation, WIC data systems, Food Stamp certification and quality control measures, Uniform Administrative Procedures Act, management evaluation, technical assistance to state and local agencies, policy development, program review and analysis, writing, editing, and publication design.

Relevant Experience

Associate, Burger, Carroll Associates. Currently supporting information system requirements definition effort for the West Virginia WIC Program and contributing to the development of a WIC food cost forecasting model for the New York WIC State Agency.

Consultant, Applied Management Sciences, Silver Spring, Maryland. WIC Vendor Issues Study, a study to measure the incidence and prevalence of retail abuse in the WIC Program (1990 to present)

Consultant, U.S. Department of Agriculture, Food and Nutrition Service, Office of Analysis and Evaluation. Planned and conducted evaluation of the Farmers' Market Coupon Demonstration Project. Primary author of Project report (1989-90)

Consultant, Research Triangle Institute, Washington, D.C., under contract to USDA-FNS, to conduct the "Food Stamp Program Integrity Methodological Feasibility Study." Study objective was to assess the feasibility of measuring the potential financial loss as a result of trafficking in Food Stamps, including the fraud reduction potential of EBT systems (1990)

Management Consultant, North Carolina Department of Human Resources, Division of Health Services. Assessed, planned, and developed improvements to vendor subsystem (1989)

Consultant, Florida Department of Health and Rehabilitative Services. Developed and wrote The WIC Files, a volume of WIC vendor and participant investigative case studies (1988-89)

Subcontractor, Miranda Associates, Inc. Produced a Mock Trial session at National WIC Conference (1988)

Operator, National AIDS Hotline, American Social Health Association, Research Triangle Park, North Carolina. Answered questions from the general public on all aspects of AIDS prevention, education, and local resources (1988)

Linda A. Yates, continued

Food Program Specialist, U.S. Department of Agriculture, Food and Nutrition Service, Southeast Regional Office, Atlanta, GA (1975-88). Individual Program experience described briefly below:

Family Nutrition Program (Food Stamps)

Lead Reviewer for the special One Tier Quality Control Project conducted statewide in North Carolina. Duties included day to day supervision of eight staff members, review of staff casework, scheduling travel, approving travel vouchers, generating weekly and monthly progress reports, and conducting Quality Control reviews. Experience with Food Stamp Certification and income verification procedures. (1986-88)

Supplemental Food Program for WIC

As regional WIC merchant coordinator, created regional task force that developed a national model for managing WIC grocer participation. Received USDA's Distinguished Service Award for these efforts, which saved Program \$235,000 during its first year of operation. Published The WIC Papers, a comprehensive guide to best merchant management practices. (1983-86)

As unit leader for food delivery subsection, initiated review, analysis, and/or modification of ten WIC automated data processing systems in eight states. Developed review tool for ADP and merchant management. (1980-83)

At request of national office, researched and wrote feasibility study on federal regulation of retail grocery stores. Study used in development of 1982 food delivery regulations. (1979-80)

Special Nutritional Programs (National School Lunch, Breakfast, Child Care Food, and Special Summer Food Service Programs)

While responsible for Regional policy related to the child care food program, wrote and produced "The Family Day Care Administrative Handbook." Received Certificate of Merit for this work. (1977-79)

Conducted on-site reviews of USDA administered or funded local school lunch, child care, and summer food service programs for children in eight states. (1975-77)

Education (excluding Continuing Education courses)

1973 University of Georgia, M.A. Literature and Linguistics

1971 University of Georgia, B.A. Magna cum laude, Phi Beta Kappa

APPENDIX D

Description of Training Development Tools

4.1 Introduction

LinkWay is both an authoring tool and an information organizer. The teacher can create folders of information and link the folders together. A folder is usually a homogeneous collection of information that may contain text information, graphics, animation and sound. The information items contained in folders are linked together by buttons. The buttons are controlled through the use of scripts created by the teacher. Buttons on the screen can resemble familiar objects (icons).

The major characteristic of the connections in Linkway is that it allows for cross-referencing. One can create and store information in one folder and retrieve it from any place in another folder. Folders do not have to be created in the same format. In other words one can create a folder made primarily of text information and link it to a folder made primarily of graphics. LinkWay lets teachers view and capture information as their needs require.

4.2 The Object Structure of LinkWay

The fundamental objects of LinkWay are buttons, fields, pages, backgrounds, and folders. Each has its corresponding script, which contains LinkWay messages.

LinkWay is an event driven environment, and events trigger messages which are sent to the script of their receiving object. If the script of that object contains a handler for the message, the handler is executed and the message stops there.

Otherwise, the message is passed down the object hierarchy until it reaches a handler or the bottom, which is the LinkWay system itself.

Buttons are objects that one creates to click on to accomplish something. These button types and their functions are:

Go -- Enables you to go to the base, first, last, next, or previous page in the folder.

Link -- Goes to the page with the ID you specify, from any existing folder.

Find -- Searches for a text string in the folder and field you specify.

Text-pop-up-Display --A text "window" in which you can display information. The window "pops up" on the screen when one clicks on this type of button.

Picture-pop-up-Display --A picture window. The window "pops up" on the screen when you click on this button.

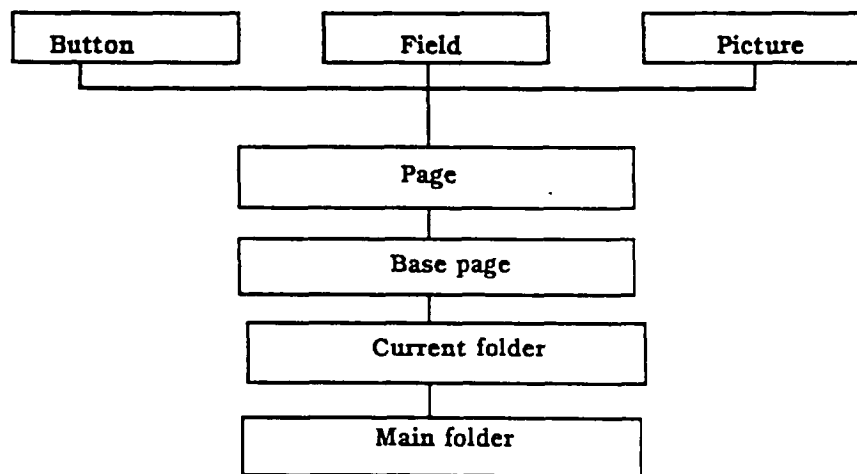
Script --The command sequence is called a script.

Script button -- A script button runs a sequence of commands.

Document -- Brings up a document from a file you specify.

The fundamental objects and concept of Linkway

The Object Structure



Picture

LWPaint is a versatile picture editor you can use to create or change pictures for a variety of applications.

LWCapture is a program stored on your LinkWay disk that allows you to format "outside graphics" to a format Linkway can use in picture objects.

LWPalette is a program used after capturing pictures to prevent changing colors in your folder.

LWRemove is a program used to remove the LWCapture utility from memory.

Field

Field objects are areas on the screen where you can display text. You also can change font, font size, and font color.

Page

Base page- Display the base page in the folder. This page establishes a common layout for a folder by storing elements that you want to appear on all pages in the folder.

First page-Display the first page in the folder.

Last page-Display the last page in the folder.

Next page-Display the next page after the current page in the folder.

Previous page-Display the previous page from the current page in the folder.

Link-Display the specified page in the specified folder when you click on link.

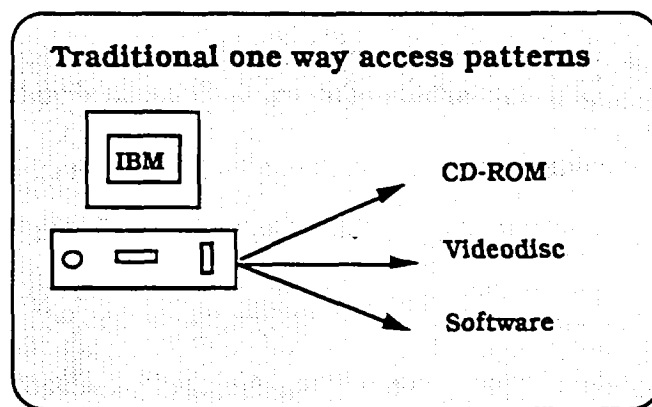
Find-Display the page containing the text you want to find.

Retrace-Display the page that was displayed prior to the current page.

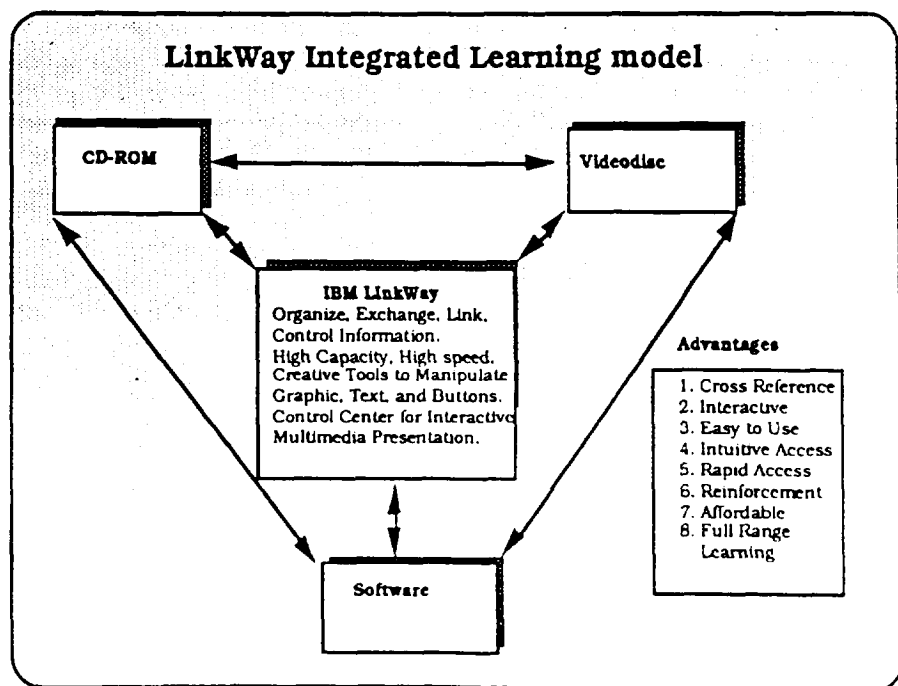
Folder

An application developed with LinkWay is called a folder. Folders contain the pages you create as part of these applications. You can have many folders on your system, and folders can be linked together.

4.3 LinkWay Integrated Learning Model



One Way Access



Multiple Access

4.4 Examples of Multimedia Integrated Learning

Lesson Plan — Cell Structures and Functions

A lesson plan using the Grollier's Encyclopedia on CD-ROM was described in Chapter two. A lesson plan using *The Living Textbook: Life Science* videodisc to introduce students to cell parts and functions was presented in Chapter three and the multimedia integration capability of LinkWay software was identified in Chapter four.

The following is an example of how a teacher-prepared integrated learning experience would use the combined resources provided by the science videodisc, the CD-ROM and a computer software lesson for full-range student learning.

Procedure:

Use the LinkWay software to develop a "cell structure" LinkWay folder by creating buttons that access the science videodisc images, the Grollier's Encyclopedia on CD-ROM and the IBM software program, Human Life Process I: Cellular Physiology, and then return to a LinkWay screen or directions.

The videodisc button accesses the images described in the videodisc lesson, introducing students to cell structures.

The computer lesson button takes students to the Human Life Processes I: Cellular Physiology menu. Section 2, CELLS, guides students through a sequence of instruction that provides opportunities to further explore cell parts and functions.

The CD-ROM button rapidly accesses research information contained in Grollier's Encyclopedia providing further teacher-directed reinforcement assignments or supplemental information.

EDUCATIONAL VIDEODISC WORKSTATION

The technology needed to create and operate a Videodisc Workstation is within easy grasp. The equipment has been designed to enable someone with only a basic knowledge of computer usage to operate the required hardware and software.

An Educational Videodisc Workstation consists of six essential components:

- 1) Laserdisc Player
- 2) Color Screen
- 3) Personal Computer with Monitor.
- 4) Interface to connect the laser disc player to the computer
- 5) Authoring Software or Access Software
- 6) Selection of one or more laser disc

1) THE LASERDISC PLAYER

Teaching Technologies recommends, and currently distributes, two laser disc players. Both models are computer compatible and of industrial quality.

A) Pioneer LD-V2000

Well designed for classroom use. This model offers complete control over the information stored on the laser disc. The search time across 54,000 frames is less than eight seconds. A wireless remote control is included. The LD-V2000 can be used with either a standard television or a monitor. This model does not have a built in character generator.

B) Pioneer LD-V4200

This model is specifically designed for use with the computer, giving complete control over the laserdisc information. This model can search the entire length of the disc in less than 3.5 seconds. It can also jump up to 100 frames without showing a break between the pictures. The capability to put text over the video picture is built into the LD-V4200. This player's remote control is hard-wired and must be ordered as an extra. The player is designed for use with a monitor and does not come equipped to be used with a television.

Other manufacturers offer laser disc players that are similar to the above models. Some of these machines will work in a workstation with little or no modification to any of the other components. If you have any questions about a player, contact us to determine the compatibility.

2) COLOR SCREEN

The Pioneer LD-V2000 can be used with either a color monitor or a normal T.V. set. With either application the screen must be large enough to show the videodisc images to the intended audience. The Pioneer LD-V4200 is limited to using a color monitor.

3) PERSONAL COMPUTER

The personal computer provides the ability to program the laserdisc player, and to store information related to the laserdisc... text, frame numbers, graphics, etc. Therefore, the computer must have large enough memory and have compatible output ports.

The Apple II family (II+, IIe, IIfx, IIGs) of computers are very popular computers for use in the laserdisc workstation. Other personal computers such as IBM, Macintosh, Atari, etc. can also be used with the laserdisc player.

4) LASERDISC INTERFACE

The laserdisc Interface is the hardware that allows communication between the laserdisc player and the computer. There are several different interfaces to match different machines.

Single Cable Interfaces

The single cable interface is the easiest to install and allows two-way communication between computer and laserdisc player.

Video Switching Interface

The video switching interface also provides two-way communication. Its advantage over the single cable interface is video switching. Video switching is the capability to alternate between video images and computer text on the same screen.

5) SOFTWARE

Software is needed for communication between the computer and laserdisc player. Programs which facilitate this interaction are called drivers. Drivers are available in various computer languages familiar to classroom teachers. Teaching Technologies offers driver shells in Logo, Basic, and Pascal.

Authoring systems are an alternative method for creating lessons with laser discs. A unique advantage of an authoring system is its ability to guide a non-programmer through the creation of interactive video lessons.

LaserWorks is an authoring system designed for the non-programmer. In a step-by-step process LaserWorks allows a novice to create professional programs using a computer and laserdisc player.

6) LASER DISCS

The laser disc is a new audio-visual medium with capabilities of particular value to educational training. The medium provides a high fidelity stereo sound and video image. The medium does not wear during playback. It has vast storage capability: able to house 108,000 still images on a single disc. The information is randomly accessible, and easy to use.

Laser discs come in two formats. These are CAV and CLV. The CAV is a standard play disc providing still frame and slow motion capability. The CLV is an extended play format suitable for movies. Numerous discs are available. See provided listing.



INTERACTIVE VIDEO INDUSTRY ASSOCIATION

Learning Benefits of Interactive Technologies

Interactive learning systems are gaining widespread acceptance within educational and training communities. Such systems have now been available for over ten years, with hundreds of off-the-shelf programs and custom applications produced to date. Leading corporate, institutional, and governmental users report the following benefits achieved through their use of these technologies.

1. Reduced learning time – well over thirty studies compiled to date have found that interactive technologies reduce learning time requirements by an average of fifty percent. This time reduction can be attributed to a variety of factors:

- o self-paced instruction encourages students to take the most efficient path to content mastery – skipping areas of strength while investing more time in areas of weakness.
- o the combination of visual presentation with audio explanation delivers information in an easily understood format.
- o immediate interaction and feedback provides constant, highly-effective reinforcement of concepts and content.
- o personalized instruction accommodates different learning styles to maximize student learning efficiency.

In one example, the IBM Principals of the Alphabet Literacy System, an interactive video-based course, is achieving increases of over two years in reading and writing skills with only 100 hours of instruction.

2. Reduced cost – the primary costs of interactive instruction lie in design and production, not replication, distribution, and delivery. Thus, the cost per student is reduced as more students use the same program. With traditional instructional methods, the costs of instruction lie primarily in the delivery (i.e. teacher salaries, overhead) and remain constant or even increase as more students place greater demands on fixed resources.

A typical cost-per-student break-even point for interactive instruction might occur when from 100 to 200 students are using a program. Beyond that number, savings build dramatically.

In one example, Federal Express expects to save over \$100 million by using interactive systems for employee training.

3. Instructional consistency – technology-based instructional systems do not have bad days or tire at the end of a long day. Instruction is delivered in a consistently reliable fashion that does not vary in quality from class to class or school to school.

4. Privacy – with one-on-one systems, students are free to ask questions and explore areas that might cause embarrassment in group situations. Also, because instructional systems never lose patience, they encourage learners to persist in asking questions and reviewing materials until real mastery is achieved or natural curiosity is appeased.

In one example, an interactive program called TeenScope allows teenagers to prepare for the transition to living on their own. It includes such topics as finding a job, pregnancy and parenting, sexuality, building self-esteem, what to do with a paycheck, and feelings about families – topics that are difficult to openly explore in large group situations.

5. **Mastery learning** – unlike a normal classroom situation, an interactive system will not move on to new material until current material is mastered. This insures that students have strong foundations for continued learning.

In one example, at-risk students in Everett, Washington achieved a 53-point gain, from 38% pre-test scores to 91% post test scores, using interactive mathematics instruction from Systems Impact. Similarly, remedial and Chapter 1 students in Bethel Park, Pennsylvania achieved 300% improvement, jumping from 21% pre-test scores to 88% post-test scores using the same program.

6. **Increased retention** – the process of interaction with material being studied provides a strong learning reinforcement that significantly increases content retention over time.

In a typical example, Spectrum Interactive (a division of National Education Corporation) reports over 25% improvement in retention with interactive video courses.

7. **Increased safety** – with interactive systems, students can explore potentially dangerous subjects without risk. These dangers might be in academic areas (chemistry explosions, burns) or social areas (drugs, sexually transmitted diseases, pregnancy).

In one example, the TARGET system allows students to learn about drugs and alcohol and consequences of substance abuse without the dangers of experimentation. In another example, a course on basic electronics and maintenance allows the student to accidentally touch the wrong parts without risking electrocution.

8. **Increased motivation** – interactive systems provide a level of responsive feedback and individual involvement that has proven to be highly motivating in both individual and classroom learning environments. Further, interactive systems focus attention, reducing the potential for distraction or disruptive classroom behavior.

9. **Increased access** – interactive systems can provide greater and more equal access to quality education. Systems can deliver peripheral subjects in schools where student populations are insufficient to support full time teachers for such subjects or where qualified teachers are unavailable. Further, interactive systems can be used to simulate laboratory equipment that would typically be too expensive to make available to students.

In one example, the Minnesota Educational Computing Consortium offers a videodisc on basic economics, a course that many smaller high schools in the state are unable to offer for lack of teachers. In another example, a basic chemistry laboratory course using interactive video allows students to explore such areas as gas spectrography, using simulations of equipment that would otherwise cost tens of thousands of dollars.

10. Finally, learners enjoy interactive learning. Interactive systems allow learners to take greater control and hence responsibility for their own learning process. As they discover new areas of interest and accomplishment they become seekers of knowledge not just recipients of instruction. In essence, interactive systems allow students to learn how to learn – both a skill and an appreciation that will serve them throughout their lives.

(Source: "Learning Benefits of Interactive Technologies," prepared by Rockley L. Miller, Editor and Publisher of The Videodisc Monitor, PO Box 26, Falls Church VA 22046, 703/241-1799, FAX 703/532-0529; and President, Interactive Video Industry Association, 1700 N. Moore Street, Suite #1905, Arlington VA 22209, 703/558-7350, FAX 703/558-7366; *Reprinted with permission*).